

EPA COLLECTION SYSTEM INSPECTION

DECEMBER 16 – 18, 2013

FACILITY INSPECTION DETAILS

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- *MORRIS COVE PUMP STATION*
- *REGULATOR 012 AND CSO 012 MITCHELL DRIVE*

**EPA COLLECTION SYSTEM INSPECTION
DECEMBER 16 – 18, 2013
FACILITY INSPECTION DETAILS**

REG 003 AND CSO 003

METERS OF-003 SEWER AND OVERFLOW

- Meter OF-003 Sewer was installed in the 64 inch high by 72 inch wide sewer downstream of REG 003 on 6/5/12 at an invert elevation of 2.39 (overflow depth is 46 inches)
- Meter OF-003 Overflow was installed in the 54 inch overflow pipe on 6/5/12 at an invert elevation of 2.75
- The regulator consists of an 5 foot long transverse weir
- The weir was damaged during an intense rain event and replaced in August 2012
- The damage was discovered via the flow metering program
- CSO start and stop times are based on a depth greater than 46 inches at Meter OF-003 Sewer and positive velocities at Meter OF-003 Overflow
- CSO volumes are calculated based on depths and velocities at Meter OF-003 Overflow, the hydraulic elements chart and the Continuity Equation
- CSO 003 discharges to the West River at the Orange Avenue bridge abutment

CSO 003 FLOW MONITORING DATA

- There have been 47 CSO events between June 2012 and September 2013
- The total CSO volume is 27.6 MG
- In a typical year it is estimated that CSO 003 will activate approximately 35 times
- In a typical year it is estimated that CSO 003 will discharge approximately 22 MG

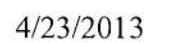
STUDY TO REDUCE CSOs TO THE WEST RIVER APPROVED

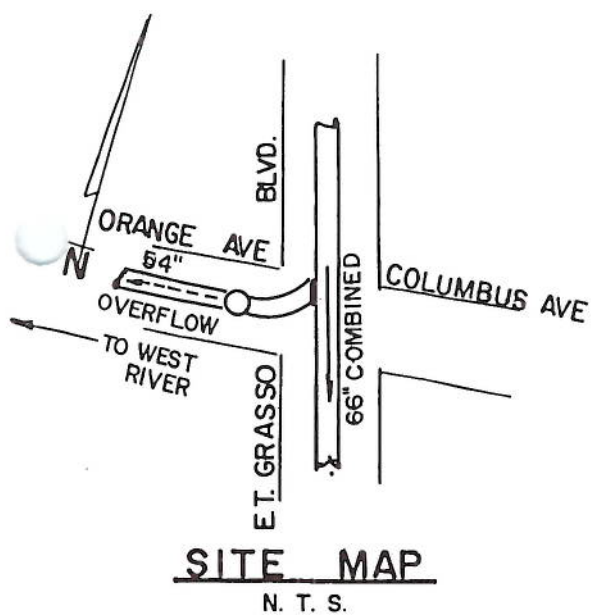
Based on flow metering data from the Authority's ongoing combined sewer overflow (CSO) Flow Monitoring Program, the GNHWPCA engineering department identified some potential improvements to the sewer system that will reduce CSOs to the West River during rain events. In November 2013, the GNHWPCA Board and the Connecticut Department of Energy and Environmental Protection approved hiring the engineering firm CH2M Hill to conduct the study. The engineering report will develop a Recommended Plan to:

- Reduce CSOs to the West River by modifying or constructing new regulators
- Maximize use of the existing 5 million gallon Truman CSO storage tank
- Maximize pumping from the Boulevard pump station

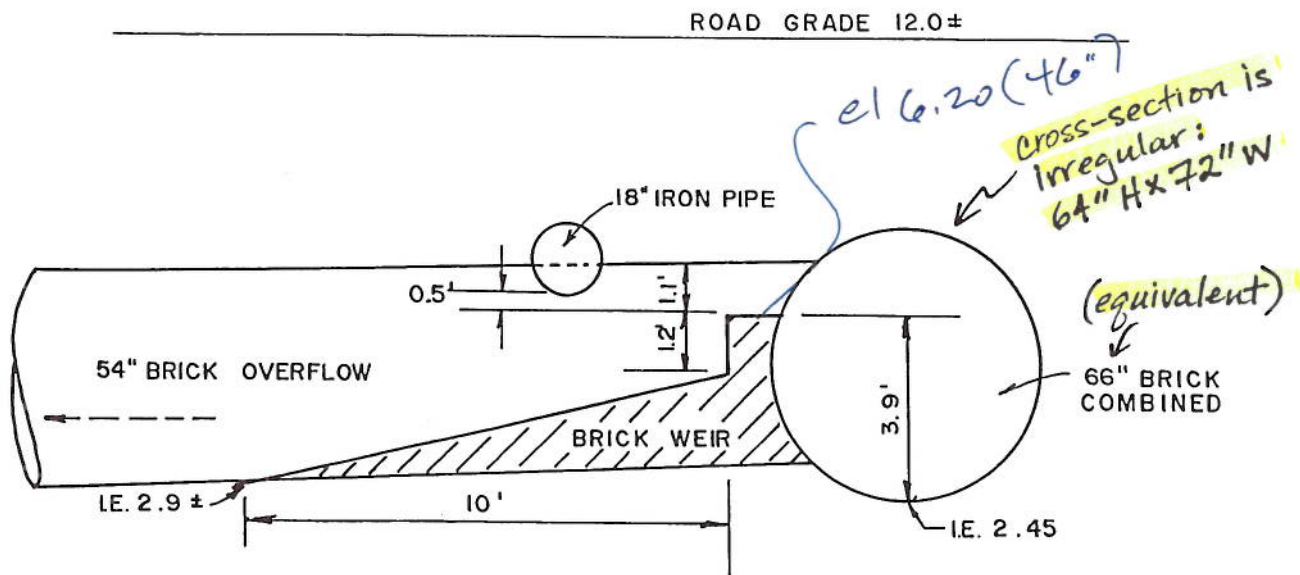
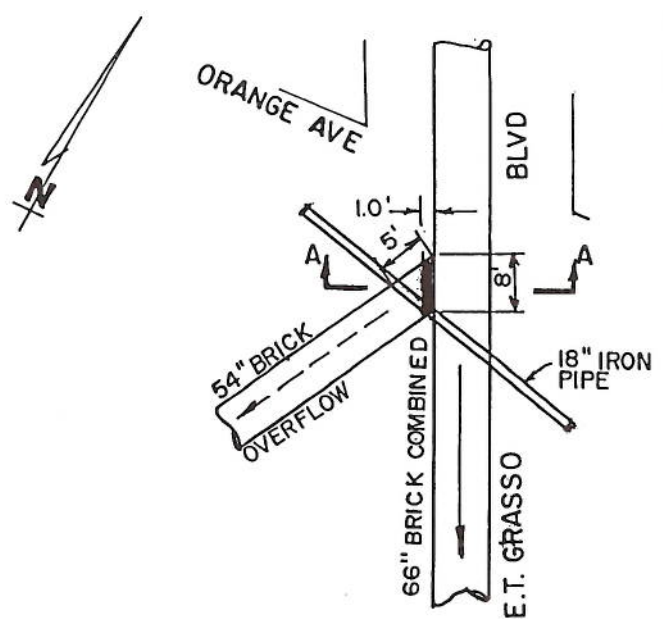
- Maximize conveyance and storage in the Boulevard trunk sewer
- Increase CSOs to New Haven Harbor (if necessary)
- Evaluate green infrastructure alternatives within the Boulevard trunk sewer tributary areas

The six month study is expected to start in December 2013. A meeting will be scheduled in the spring of 2014 to present the draft Recommended Plan and implementation schedule to the public and obtain comments that will be incorporated into the final plan.





NOTE: 80°F / DRY @ 2:00 PM
FLOW DEPTH 3' FT IN 66"



OVERFLOW NO. 0 B 4 / 003
E. T. GRASSO BLVD @ ORANGE AVE
NEW HAVEN, CONNECTICUT

DATE: 7-30-97
JOB NO. 1146
SHT. NO. 21



8-16-2012.



8-16-12 - CSO-03



8-16-2012 GSO-03
REPLACEMENT OF OVERFLOW WEIR
VIEW LOOKING AT WEIR FROM OVERFLOW PIPE.

**EPA COLLECTION SYSTEM INSPECTION
DECEMBER 16 – 18, 2013
FACILITY INSPECTION DETAILS**

TRUMAN CSO STORAGE TANK

- The Truman CSO storage tank was constructed in 2006
- The tank consists of two cells each with a volume of 2.5 MG
- During a storm event the bending weir will allow flow to enter cell #1
- Once cell #1 is full, a flap valve will open allowing flow to enter cell #2
- After the rain event when flows at the Boulevard Pump Station and the ESWPAF have dropped to dry weather flow conditions, a 3500 GPM submersible pump will empty each cell by pumping flow back to the Boulevard Trunk Sewer
- Each cell is then cleaned via six tipping buckets to prepare the tank for the next rain event

METER GNH1 SEWER AT TRUMAN TANK

- Meter GNH1 Sewer was installed in the 64 inch high by 72 inch wide sewer downstream of the Truman Tank Diversion Chamber on 6/12/12 at an invert elevation of 1.29 (there is 14 inches of hard packed sediment in the Diversion Chamber) (overflow depth is 36 inches)
- The regulator is a 10 foot bending weir
- The SCADA system measures depths in each cell of the 5 MG tank
- Truman Tank activation start and stop times are based on a depth greater than 36 inches at Meter GNH1 Sewer and SCADA depths in the Truman Tank
- CSO volumes are calculated based on SCADA depths in the Truman Tank

GNH1 SEWER FLOW MONITORING DATA

- The Truman tank is effective at capturing CSO flows during rain events
- During several large rain events between June 2012 and September 2013 the Truman tank filled to its capacity of 5 MG
- Each cell was cleaned and the submersible pump was replaced in 2013

STUDY TO REDUCE CSOs TO THE WEST RIVER APPROVED

Based on flow metering data from the Authority's ongoing combined sewer overflow (CSO) Flow Monitoring Program, the GNHWPCA engineering department identified some potential improvements to the sewer system that will reduce CSOs to the West River during rain events. In November 2013, the GNHWPCA Board and the Connecticut Department of Energy and Environmental Protection approved

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- Maximize pumping from the Boulevard pump station
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- Evaluate green infrastructure alternatives within the Boulevard trunk sewer tributary areas

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Greater New Haven Water Pollution Control Authority
New Haven, CT

About

More...

Basemap



30 m
100 ft
Latitude: 41.292378 Longitude: -72.941649

64" H x 72" W
L = 279'
S = 0.0004

ELIA I. GRASSO BLVD

R = 14.00
I = 2.81

L = 46'
S = 0.0159
I = -2.50

L = 265'
S = 0.0200

12" DI FM 4.75

I = -3.00

SCADA monitors
depth in each cell

64" H x 72" W
L = 22'
S = 0.0006

Diversion
Chamber

64" H x 72" W
L = 50'
S = 0.0006

GNH1
R = 14.90
I = 1.29

R = 14.05
I = 1.29
W = 4.33 (36")
* 14" of hard packed
Sediment

NEM04M0517

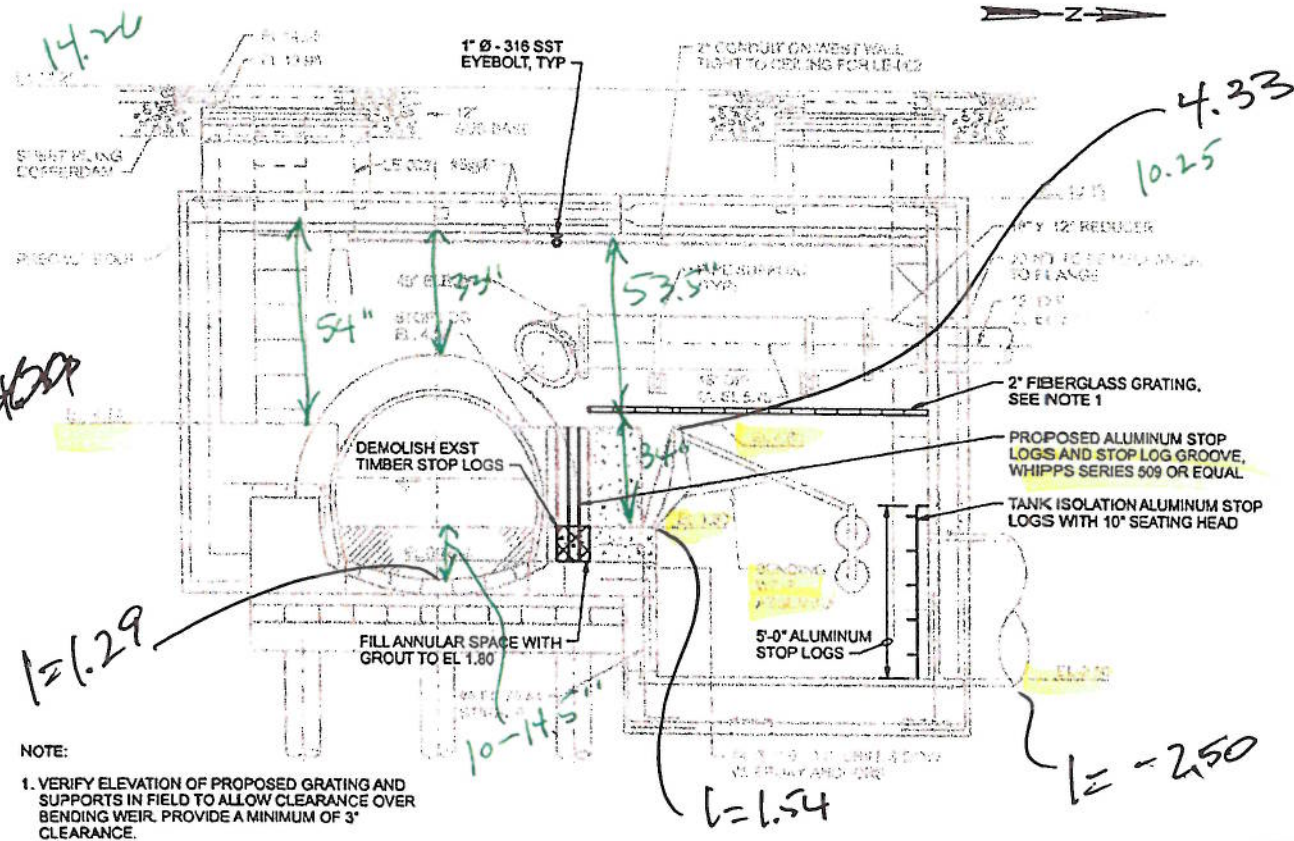
NEM04M0496

64" H x 72" W
L = 389'
S = 0.0004

TRUMAN TANK
120' W x 138' L x 22' H (each of
two cells) 2.5 MG each
Max elev 6.85'

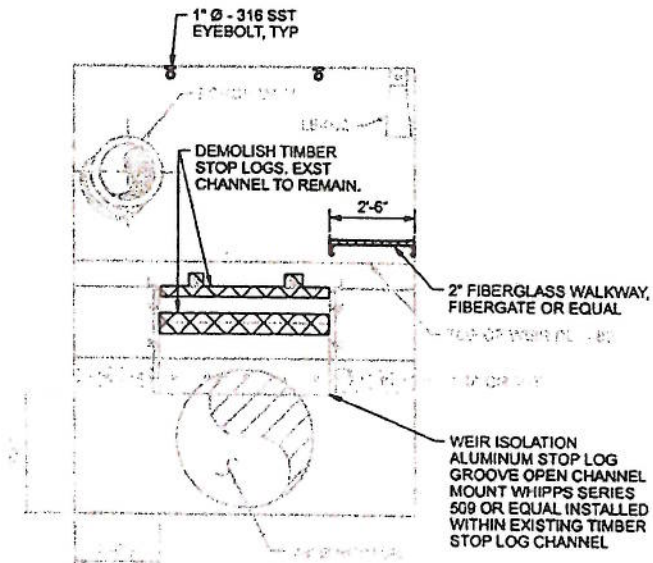
HLL #11 meter to
be installed here (redundant)

STP DEVELOPED BY
LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

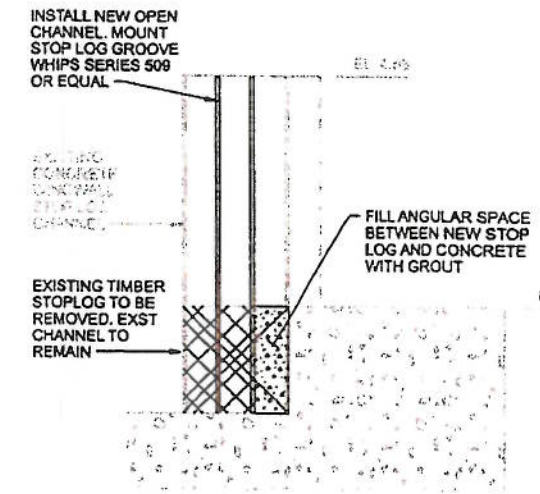


NOTE:
1. VERIFY ELEVATION OF PROPOSED GRATING AND SUPPORTS IN FIELD TO ALLOW CLEARANCE OVER BENDING WEIR. PROVIDE A MINIMUM OF 3" CLEARANCE.

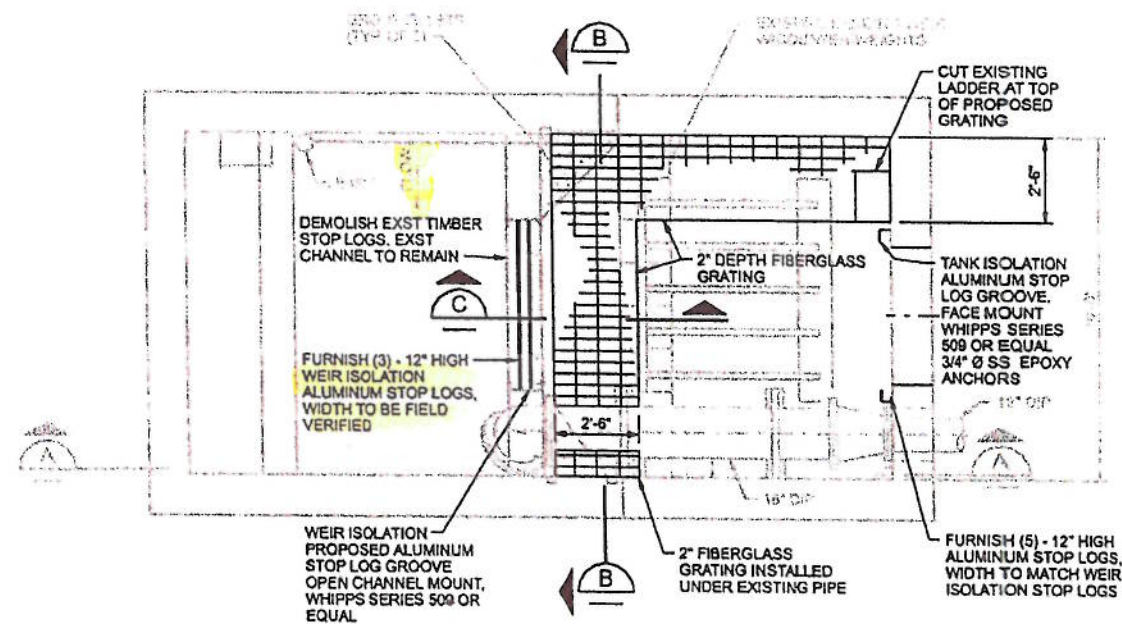
SECTION A
3/8"=1'-0"



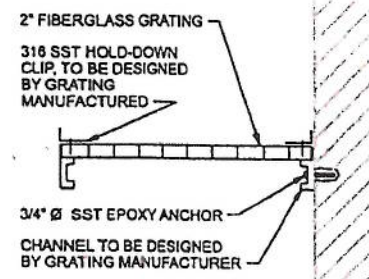
SECTION B
NTS



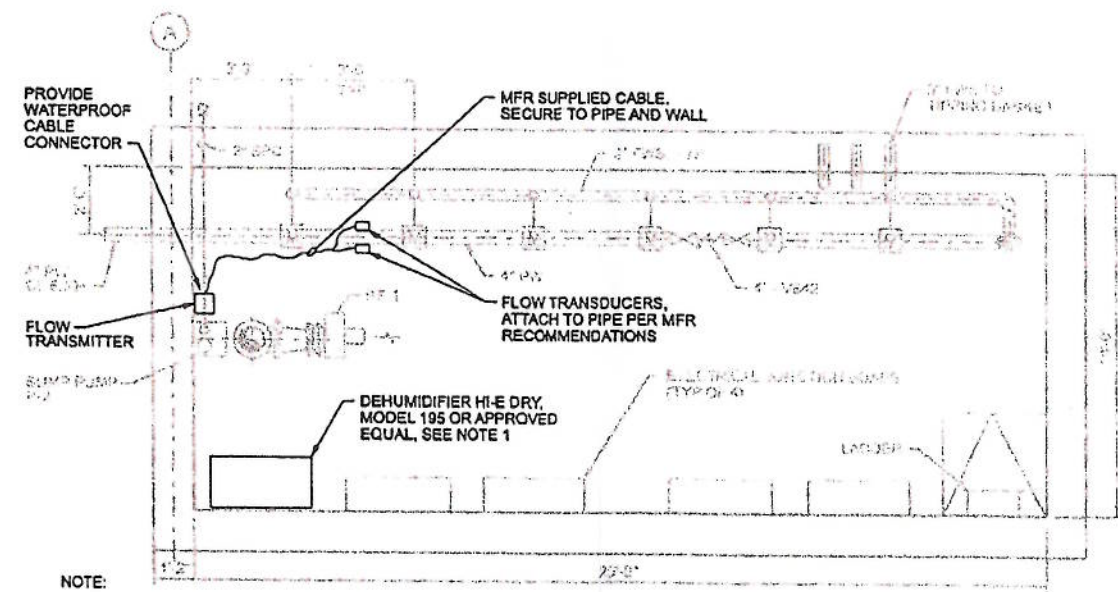
SECTION C
NTS



PLAN
3/8"=1'-0"



DETAIL 1
NTS



NOTE:
1. PROVIDE PORTABLE DEHUMIDIFIER WITH INTEGRAL CONDENSATE PUMP. PROVIDE FLEXIBLE HOSE AND DISCHARGE TO SUMP PIT. MINIMUM UNIT PERFORMANCE: 540 CM, 12 AMPS, 120V/1PH.

VALVE VAULT PLAN
3/8"=1'-0"

DSGN	R PARIKH				
DR	L SHAFFER				
CHK	M WILSON				
APVD	E FAROUZ	NO.	DATE	REVISION	BY

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1'
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

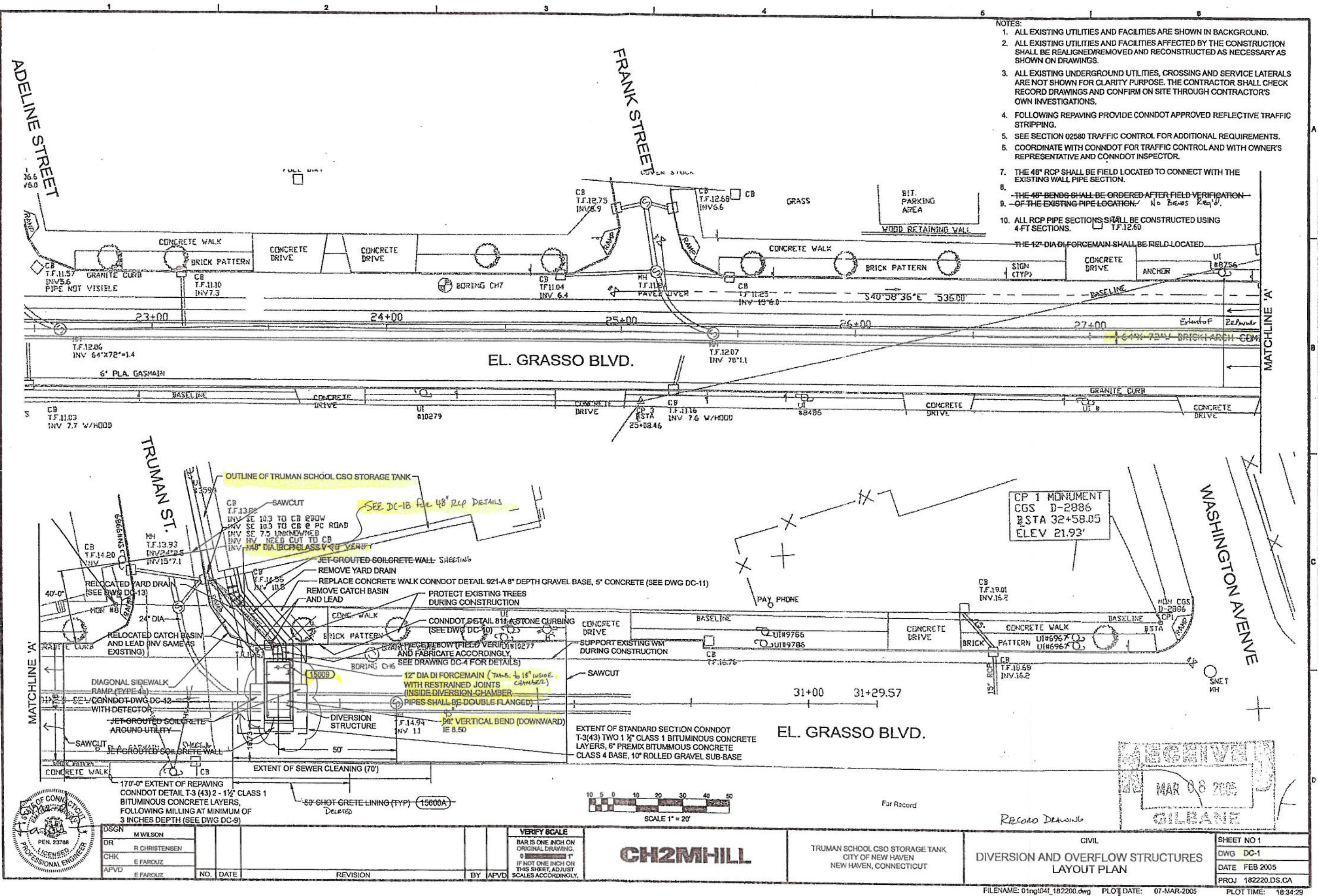
CH2MHILL

TRUMAN SCHOOL CSO STORAGE TANK
CITY OF NEW HAVEN
NEW HAVEN, CONNECTICUT

NO 9
DIVERSION STRUCTURE AT TRUMAN STREET/
EL GRASSO BOULEVARD INTERSECTION
PERMANENT STRUCTURE

SHEET	DWG DC-1A
DATE	NOV 2005
PROJ	182200.DS.GE

FILENAME: figure1_182200.dgn PLOT DATE: 11-JAN-2007 PLOT TIME: 13:26:05



**EPA COLLECTION SYSTEM INSPECTION
DECEMBER 16 – 18, 2013
FACILITY INSPECTION DETAILS**

REG 024 AND CSO 024

METERS OF-024 US and DS SEWER AND REG 024 WEIR

- Meter OF-024 US Sewer was installed in the 69 inch high by 84 inch wide sewer upstream of REG 024 on 7/30/12 at an invert elevation of -1.17 (overflow depth is 65 inches)
- Meter OF-024 DS Sewer was installed in the 48 inch sewer downstream of REG 024 on 7/30/12 at an invert elevation of -2.72 (overflow depth is 81 inches)
- Meter 024 Weir was installed to measure weir depth at REG 024 on 10/31/12 at the weir elevation of 4.40
- The regulator consists of three weirs each 4.5 feet wide
- CSO start and stop times are based on depths greater than 65 inches at Meter OF-024 US Sewer, depths greater than 81 inches at Meter OF-024 DS Sewer (verified by the Meter 024 Weir depths)
- CSO volumes are calculated by subtracting the Meter 024 DS Sewer flows from the Meter 024 US Sewer flows
- CSO 024 discharges to New Haven Harbor
- Two new tide gate were installed downstream of REG 024 in 2010

CSO 024 FLOW MONITORING DATA

- There have been 14 CSO events between June 2012 and September 2013
- The total CSO volume is 19.1 MG
- In a typical year it is estimated that CSO 024 will activate approximately 12 times
- In a typical year it is estimated that CSO 003 will discharge approximately 17 MG

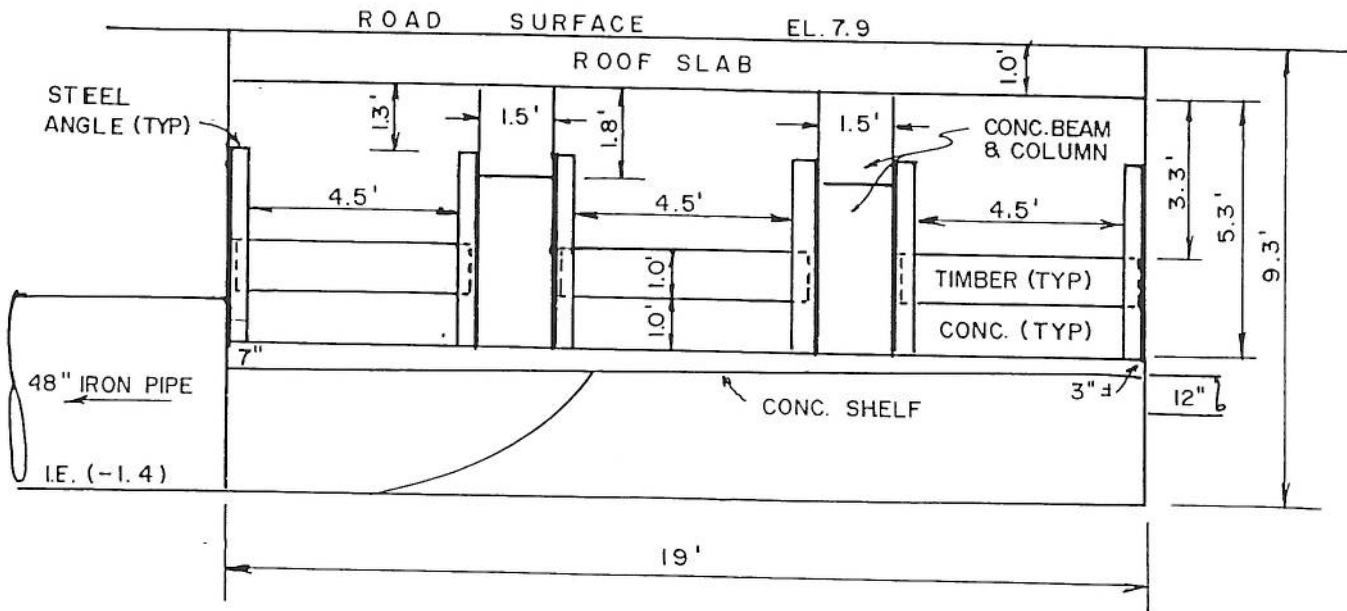
STUDY TO REDUCE CSOs TO THE WEST RIVER APPROVED

Based on flow metering data from the Authority's ongoing combined sewer overflow (CSO) Flow Monitoring Program, the GNHWPCA engineering department identified some potential improvements to the sewer system that will reduce CSOs to the West River during rain events. In November 2013, the GNHWPCA Board and the Connecticut Department of Energy and Environmental Protection approved hiring the engineering firm CH2M Hill to conduct the study. The engineering report will develop a Recommended Plan to:

- Reduce CSOs to the West River by modifying or constructing new regulators

- Maximize use of the existing 5 million gallon Truman CSO storage tank
- Maximize pumping from the Boulevard pump station
- Maximize conveyance and storage in the Boulevard trunk sewer
- Increase CSOs to New Haven Harbor (if necessary)
- Evaluate green infrastructure alternatives within the Boulevard trunk sewer tributary areas

The six month study is expected to start in December 2013. A meeting will be scheduled in the spring of 2014 to present the draft Recommended Plan and implementation schedule to the public and obtain comments that will be incorporated into the final plan.



SECTION A-A

N. T. S.

NOTE: 85° F/CLDY @ 10:00AM
FLOW DEPTH 1.1 FT. IN 48"

FLAP VALVES NOT PROPERLY SEATED.
SEA WATER FLOWING INTO CHAMBER
BETWEEN TIMBER & CONC. AT WEIR.

LEGEND

WET WEATHER FLOW

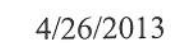
DRY WEATHER FLOW

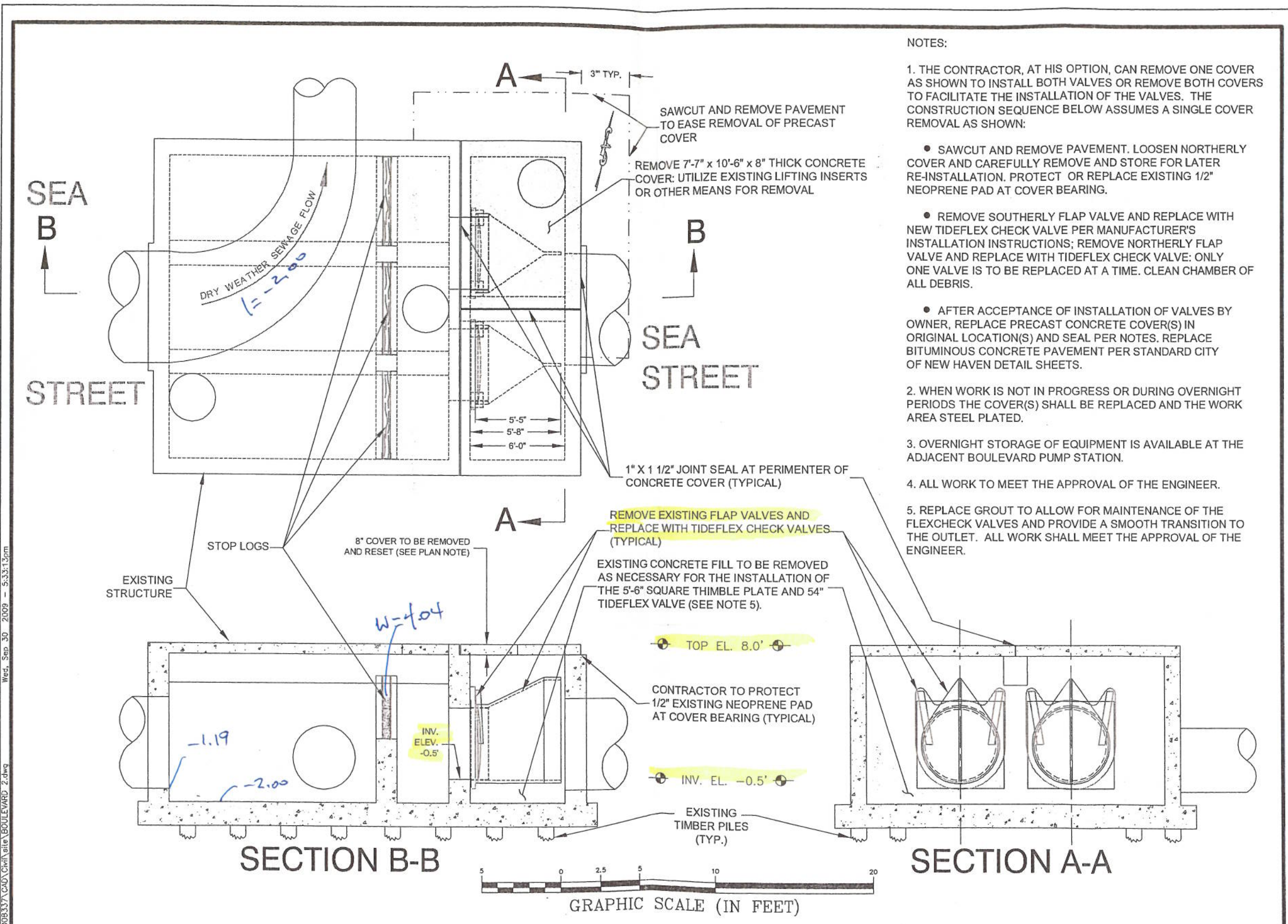
OVERFLOW NO. 0B 2/024
SEA ST. @ SO. WATER ST.
NEW HAVEN, CONNECTICUT

DATE: 7-17-97

JOB NO. 1146

SHT. NO. 16-2





NOTES:

1. THE CONTRACTOR, AT HIS OPTION, CAN REMOVE ONE COVER AS SHOWN TO INSTALL BOTH VALVES OR REMOVE BOTH COVERS TO FACILITATE THE INSTALLATION OF THE VALVES. THE CONSTRUCTION SEQUENCE BELOW ASSUMES A SINGLE COVER REMOVAL AS SHOWN:

- SAWCUT AND REMOVE PAVEMENT. LOOSEN NORTHERLY COVER AND CAREFULLY REMOVE AND STORE FOR LATER RE-INSTALLATION. PROTECT OR REPLACE EXISTING 1/2" NEOPRENE PAD AT COVER BEARING.

- REMOVE SOUTHERLY FLAP VALVE AND REPLACE WITH NEW TIDEFLEX CHECK VALVE PER MANUFACTURER'S INSTALLATION INSTRUCTIONS; REMOVE NORTHERLY FLAP VALVE AND REPLACE WITH TIDEFLEX CHECK VALVE: ONLY ONE VALVE IS TO BE REPLACED AT A TIME. CLEAN CHAMBER OF ALL DEBRIS.

- AFTER ACCEPTANCE OF INSTALLATION OF VALVES BY OWNER, REPLACE PRECAST CONCRETE COVER(S) IN ORIGINAL LOCATION(S) AND SEAL PER NOTES. REPLACE BITUMINOUS CONCRETE PAVEMENT PER STANDARD CITY OF NEW HAVEN DETAIL SHEETS.

2. WHEN WORK IS NOT IN PROGRESS OR DURING OVERNIGHT PERIODS THE COVER(S) SHALL BE REPLACED AND THE WORK AREA STEEL PLATED.

3. OVERNIGHT STORAGE OF EQUIPMENT IS AVAILABLE AT THE ADJACENT BOULEVARD PUMP STATION.

4. ALL WORK TO MEET THE APPROVAL OF THE ENGINEER.

5. REPLACE GROUT TO ALLOW FOR MAINTENANCE OF THE FLEXCHECK VALVES AND PROVIDE A SMOOTH TRANSITION TO THE OUTLET. ALL WORK SHALL MEET THE APPROVAL OF THE ENGINEER.

Q:\50008335\50008337\CAO\Civil\Boulevard 2.dwg Wed, Sep 30 2009 5:33:13pm

REV.	DATE	DESCRIPTION

Dewberry
Dewberry-Goodkind, Inc.
19 Elm Street
Suite 101
New Haven, CT 06510
Phone: 203.776.2777
Fax: 203.776.3356
ENGINEERS
PLANNERS
SURVIVORS

GREATER NEW HAVEN WATER POLLUTION CONTROL AUTHORITY
NEW HAVEN, CONNECTICUT
LONG TERM CSO CONTROL PLAN

**BOULEVARD-SEA STREET
TIDE GATE REPLACEMENT**

**B
3**

**EPA COLLECTION SYSTEM INSPECTION
DECEMBER 16 – 18, 2013
FACILITY INSPECTION DETAILS**

BOULEVARD PUMP STATION

- The Boulevard pump station and force main were constructed in the mid 1980s to replace the aging Boulevard treatment plant
- The station contains coarse screens and four vertical centrifugal wet pit-dry pit pumps (3 duty and 1 standby)
- The coarse screens are currently being replaced with new single-stage climber type bar screens
- Magnetic flow meters measure flows on each discharge header
- Levels in each of the two wetwells are monitored with ultrasonic meters
- Flow and level data is available via the SCADA system

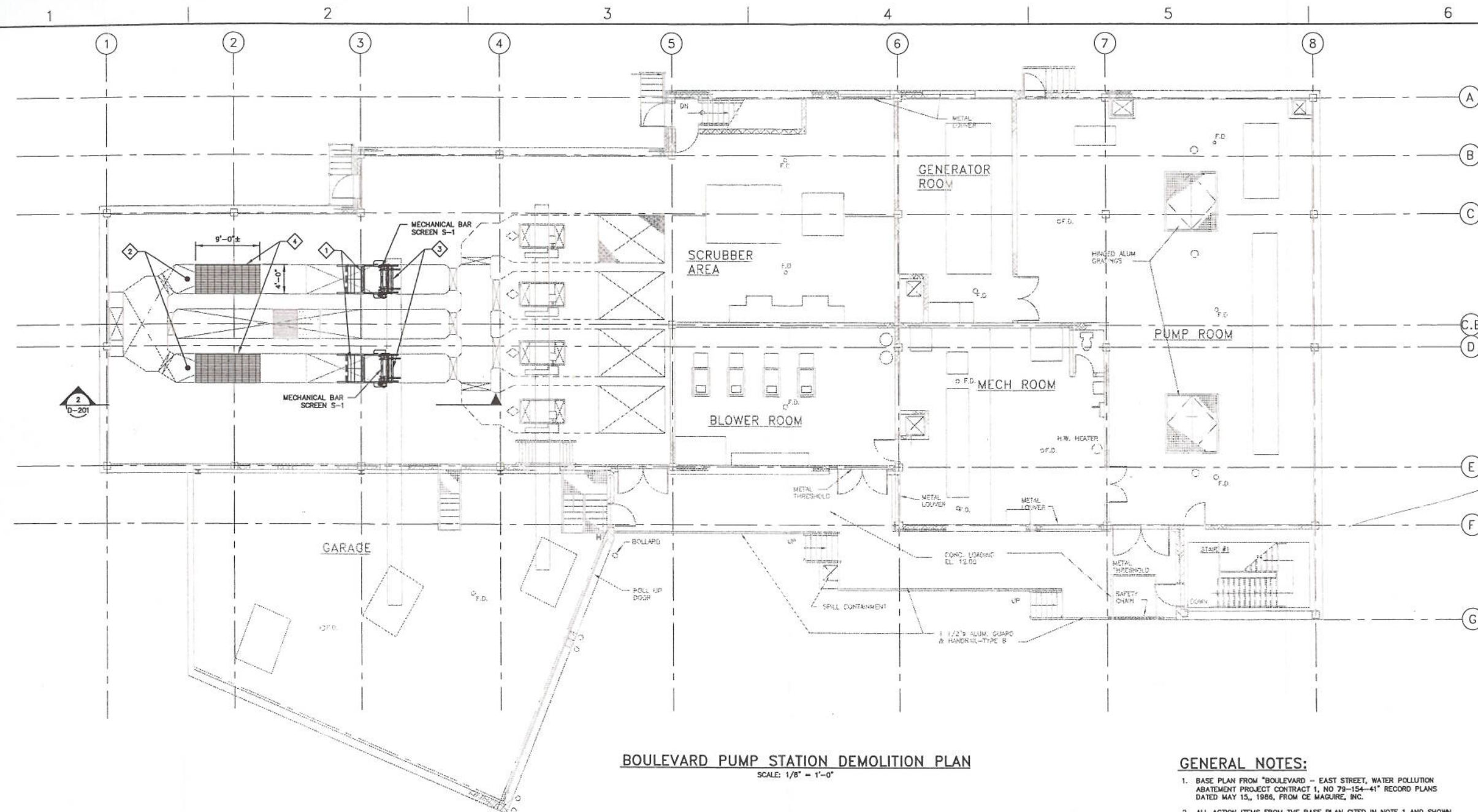
BOULEVARD PUMP STATION FLOW MONITORING DATA

- On dry weather days the wetwell operates within the operating range in the wetwell and one or two pumps operate
- The existing dry weather flow to the pump station is approximately 10 MGD
- During rain events the wetwell surcharges significantly and all three duty pumps operate
- Peak pumping capacity is approximately 30 MGD

LTCP IMPLEMENTATION

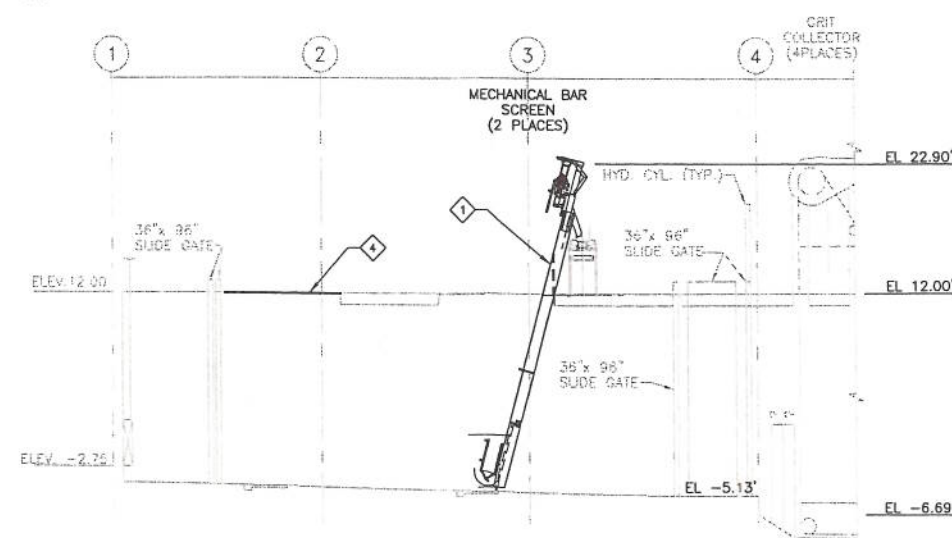
- Following improvements to the ESWPAF to expand the peak wet weather capacity from 100 MGD to 187 MGD, a major upgrade to the Boulevard pump station is planned
- The upgrade will include replacing the four existing pumps with four new pumps which will increase the peak wet weather capacity from 30 MGD to 38 MGD





BOULEVARD PUMP STATION DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

SECTION 2
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. BASE PLAN FROM "BOULEVARD - EAST STREET, WATER POLLUTION ABATEMENT PROJECT CONTRACT 1, NO 79-154-41" RECORD PLANS DATED MAY 13, 1986, FROM CE MAGUIRE, INC.
2. ALL ACTION ITEMS FROM THE BASE PLAN CITED IN NOTE 1 AND SHOWN IN BACKGROUND DO NOT APPLY TO THE WORK OF THIS PROJECT UNLESS OTHERWISE NOTED.
3. FIELD VERIFY GRATING DIMENSIONS.
4. MANUFACTURER SHALL PROVIDE EACH SCREEN IN TWO PIECES, WHICH SHALL BE BROUGHT INTO THE BUILDING AND ASSEMBLED IN PLACE BY THE CONTRACTOR.

KEYED NOTES:

1. PROVIDE TWO NEW (2) MECHANICAL BAR SCREENS IN THE LOCATION OF THE EXISTING FINE BAR SCREENS AS SHOWN ON THE DRAWINGS AND AS SPECIFIED IN SECTION 11329. BARS, SCRAPER MECHANISM AND ENCLOSURE ARE NOT SHOWN FOR CLARITY.
2. PROVIDE A SUBMERSIBLE LEVEL TRANSDUCER UPSTREAM OF EACH SCREEN. REFER TO SECTION 11329 AND DETAIL B, SHEET M-401.
3. MODIFY CONVEYOR DEFLECTOR PLATE BELOW EACH SCREEN DISCHARGE AS REQUIRED TO ENSURE SCREENINGS DISCHARGE DIRECTLY ONTO CONVEYOR WITHOUT SPLASHING ONTO OTHER EQUIPMENT OR THE OPERATING FLOOR.
4. PROVIDE FRP GRATING OVER THE OPENINGS WHERE THE EXISTING COARSE BAR SCREENS WERE LOCATED. REFER TO DETAIL A, SHEET M-401.

12' 8' 4' 0' 8' 16'

BAR SCALE
1/8" = 1'-0"
CHECK GRAPHIC SCALE BEFORE USING

44 Main Street
Windsor Locks, Connecticut 06096
888.265.8969 | www.woodardcurran.com

WOODARD & CURRAN

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REV	DESCRIPTION	DATE
1	DESIGNED BY: NO	CHECKED BY: MB
2	DRAWN BY: DMB	223133-1-2013

BOULEVARD PUMP STATION
MECHANICAL PLAN & SECTIONGREATER NEW HAVEN WPCA
NEW HAVEN, CONNECTICUTEAST STREET, BOULEVARD
AND MORRIS COVE
BAR SCREENS

JOB NO.: 223133.01
DATE: MAY 2013
SCALE: AS NOTED
SHEET: 6 OF 12

M-201

**EPA COLLECTION SYSTEM INSPECTION
DECEMBER 16 – 18, 2013
FACILITY INSPECTION DETAILS**

REG 021 AND CSO 021

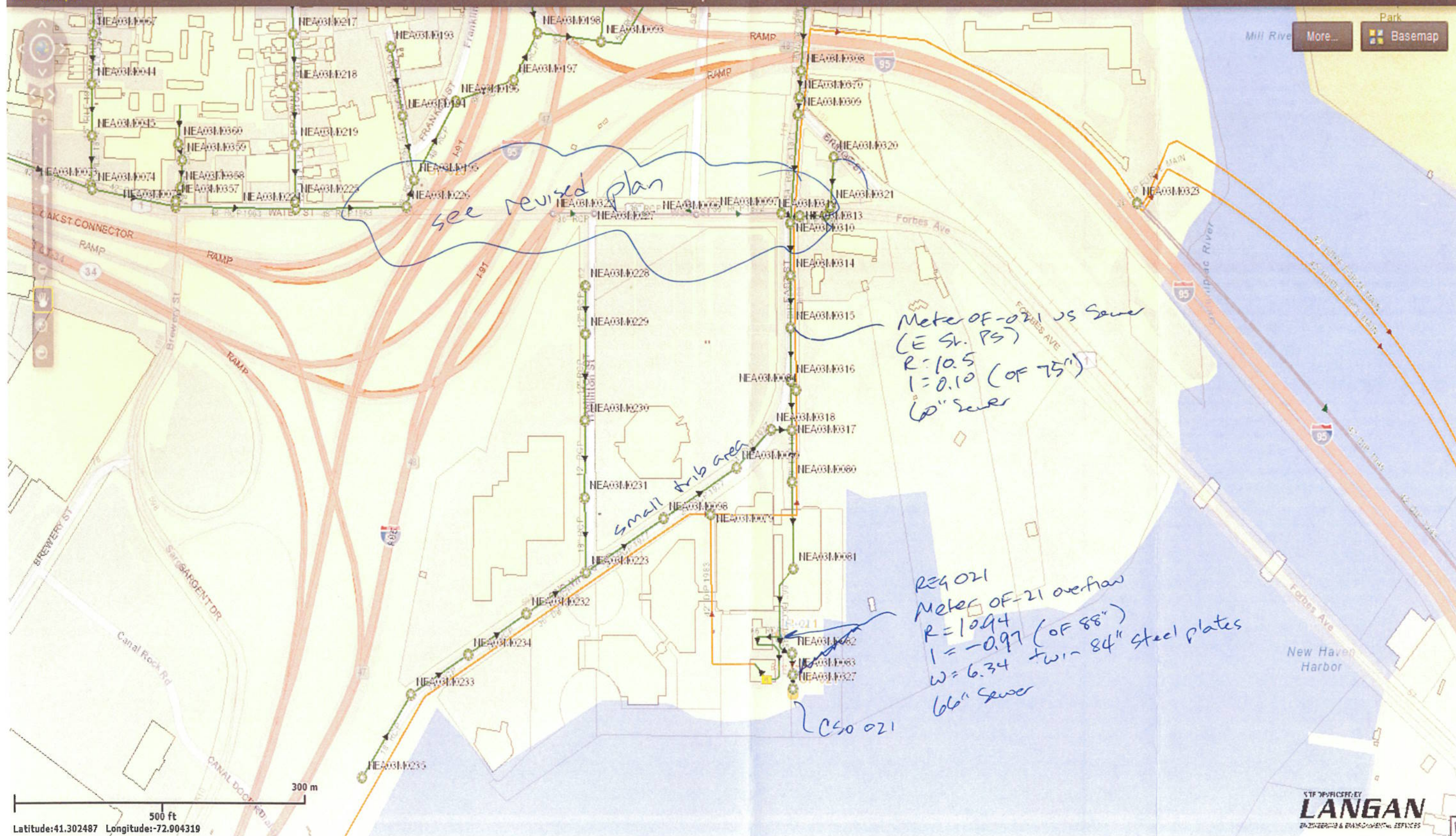
METERS REG 021-OF AND OF-021 US SEWER (E ST PS SEWER)

- Meter OF-021 US Sewer (E St PS) was installed in the 62 inch wide by 67 inch high sewer upstream of REG 021 on 9/13/12 at an invert elevation of 0.10 (overflow depth is 75 inches)
- Meter OF-021 was installed in REG 021 on 11/15/12 at an invert elevation of -0.97 (overflow depth is 88 inches)
- The regulator is twin 84 inch wide steel plate weirs at elevation 6.34
- A new duckbill on the overflow pipe in 2013
- CSO start and stop times are based on a depth greater than 88 inches at REG 021
- CSO volumes are calculated based on depth over the twin 84 inch weirs at REG 021 using the weir formula
- CSO 021 discharges to New Haven Harbor

CSO 021 FLOW MONITORING DATA

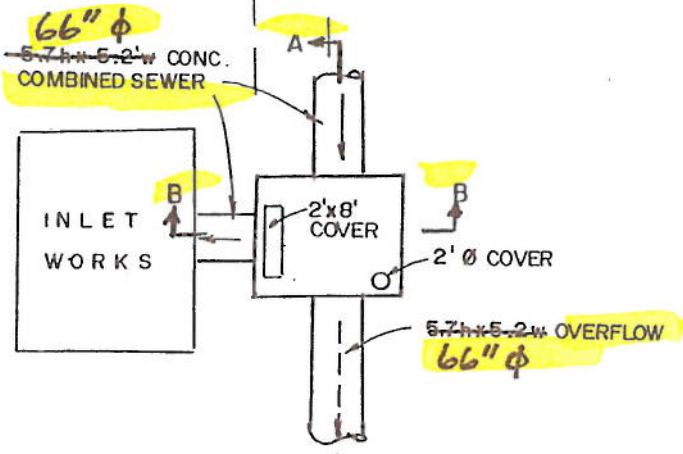
- There have been 18 CSO events between September 2012 and September 2013
- The total CSO volume is 18.0 MG
- In a typical year it is estimated that CSO 021 will activate approximately 20 times
- In a typical year it is estimated that CSO 021 will discharge approximately 21 MG

Greater New Haven Water Pollution Control Authority
New Haven, CT

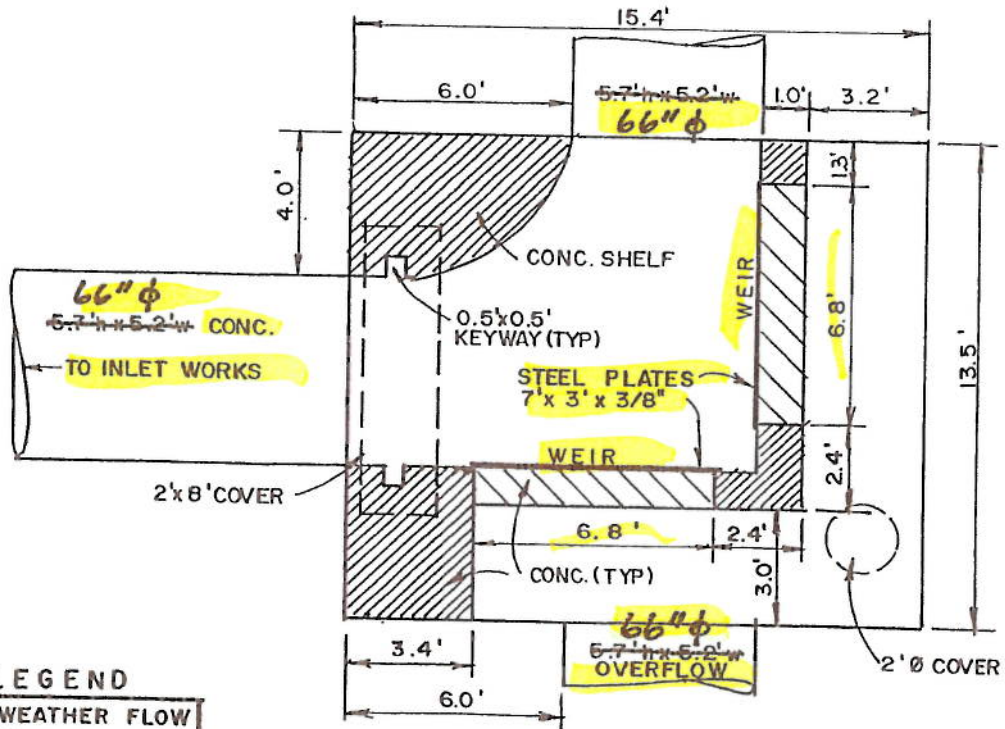


LONG WHARF DR.

REGULATOR NOTEBOOK



SITE MAP
N. T. S.

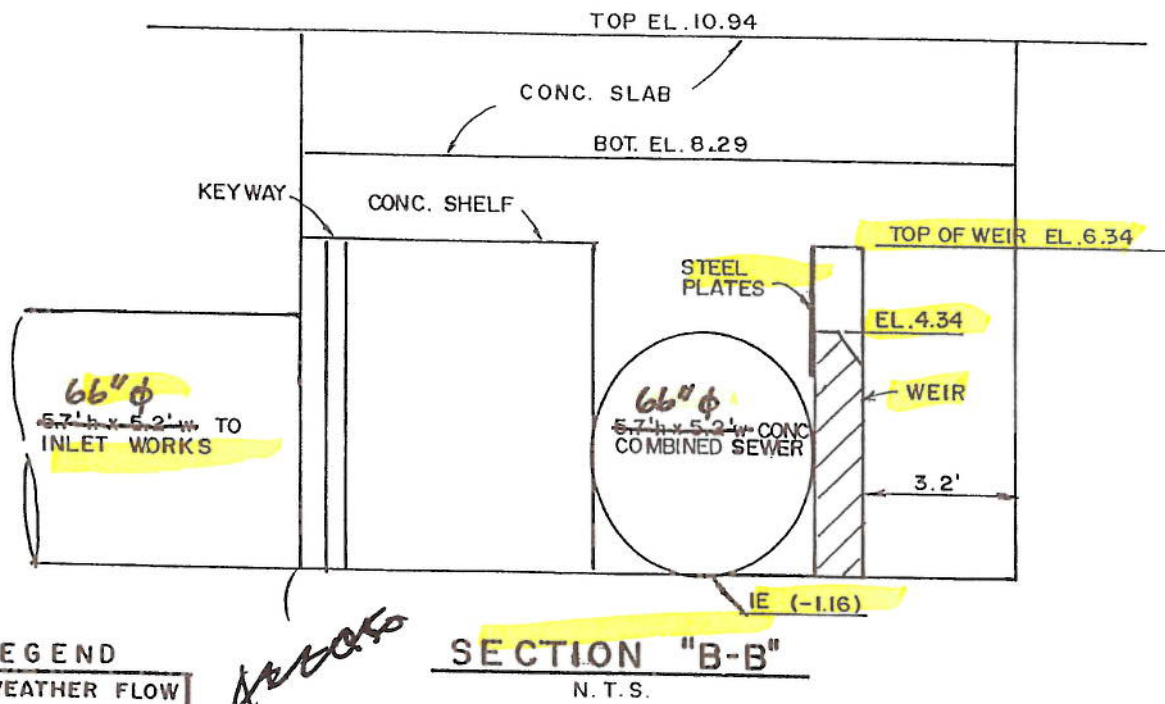
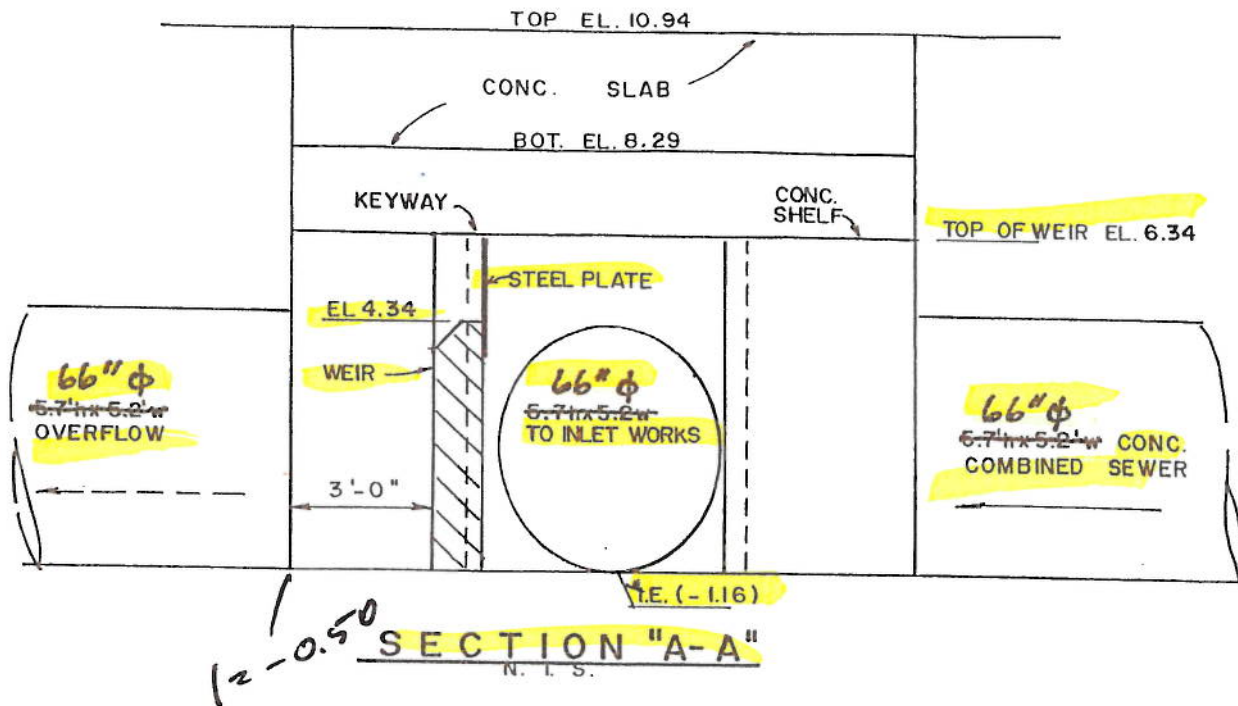


LEGEND
WET WEATHER FLOW
DRY WEATHER FLOW

PLAN
N. T. S.

OVERFLOW NO. 021
EAST ST. PUMP STATION
NEW HAVEN, CONNECTICUT

DATE: 7-31-97
JOB NO. 1146
SHT. NO. 20-1



LEGEND

WET WEATHER FLOW

DRY WEATHER FLOW

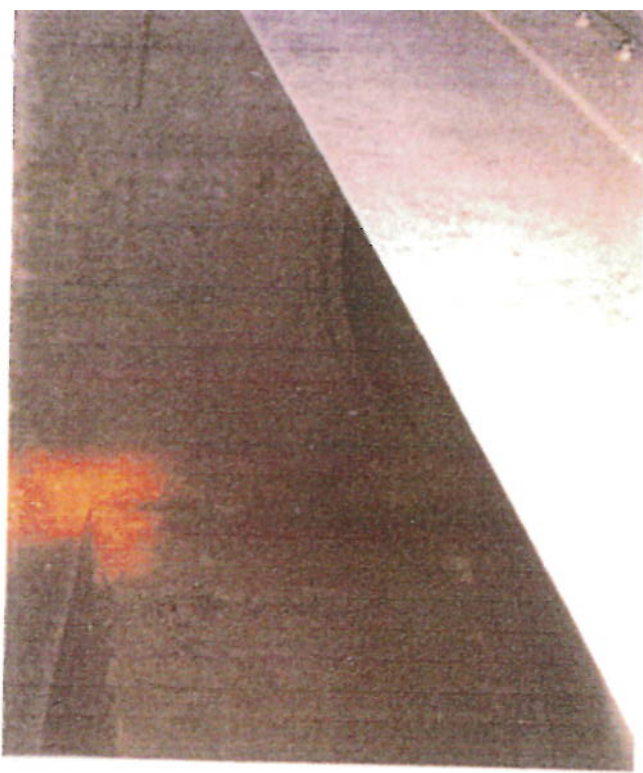
NOTE: 85°F/DRY @ 3:00 PM
FLOW DEPTH 3 FT ±

OVERFLOW NO. 021
EAST ST. PUMP STATION
NEW HAVEN, CONNECTICUT

DATE: 7-31-97
JOB NO. 1146
SHT. NO. 20-2

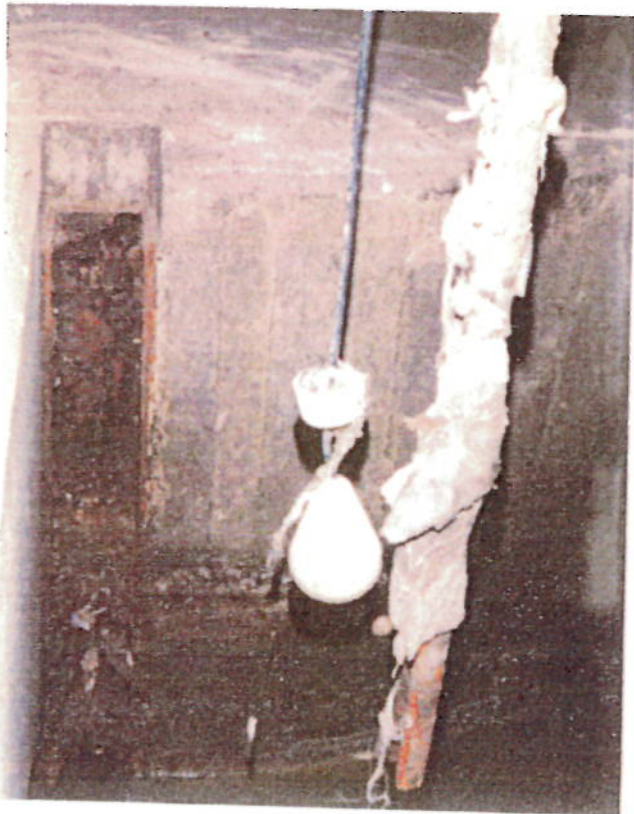
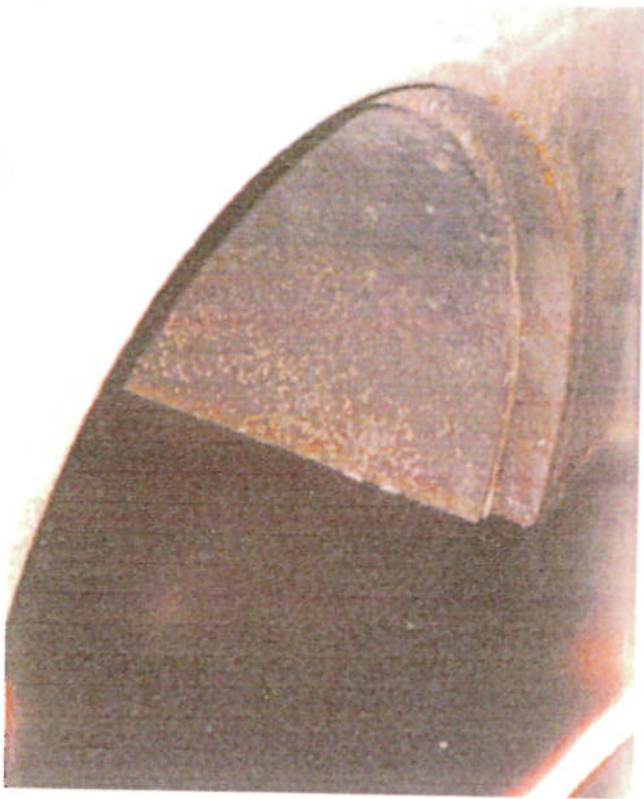
EAS
LC
CCTV





10/12





021

EAST ST PUMP STATION

LOOKING NORTH @

EASTERN WEIR

021

EAST ST PUMP STATION

LOOKING S-W @

OVERFLOW PIPE

021

EAST ST PUMP STATION

LOOKING SOUTH @ KEYWAY

021

EAST ST PUMP STATION

LOOKING NORTH @ KEYWAY

**EPA COLLECTION SYSTEM INSPECTION
DECEMBER 16 – 18, 2013
FACILITY INSPECTION DETAILS**

EAST STREET PUMP STATION

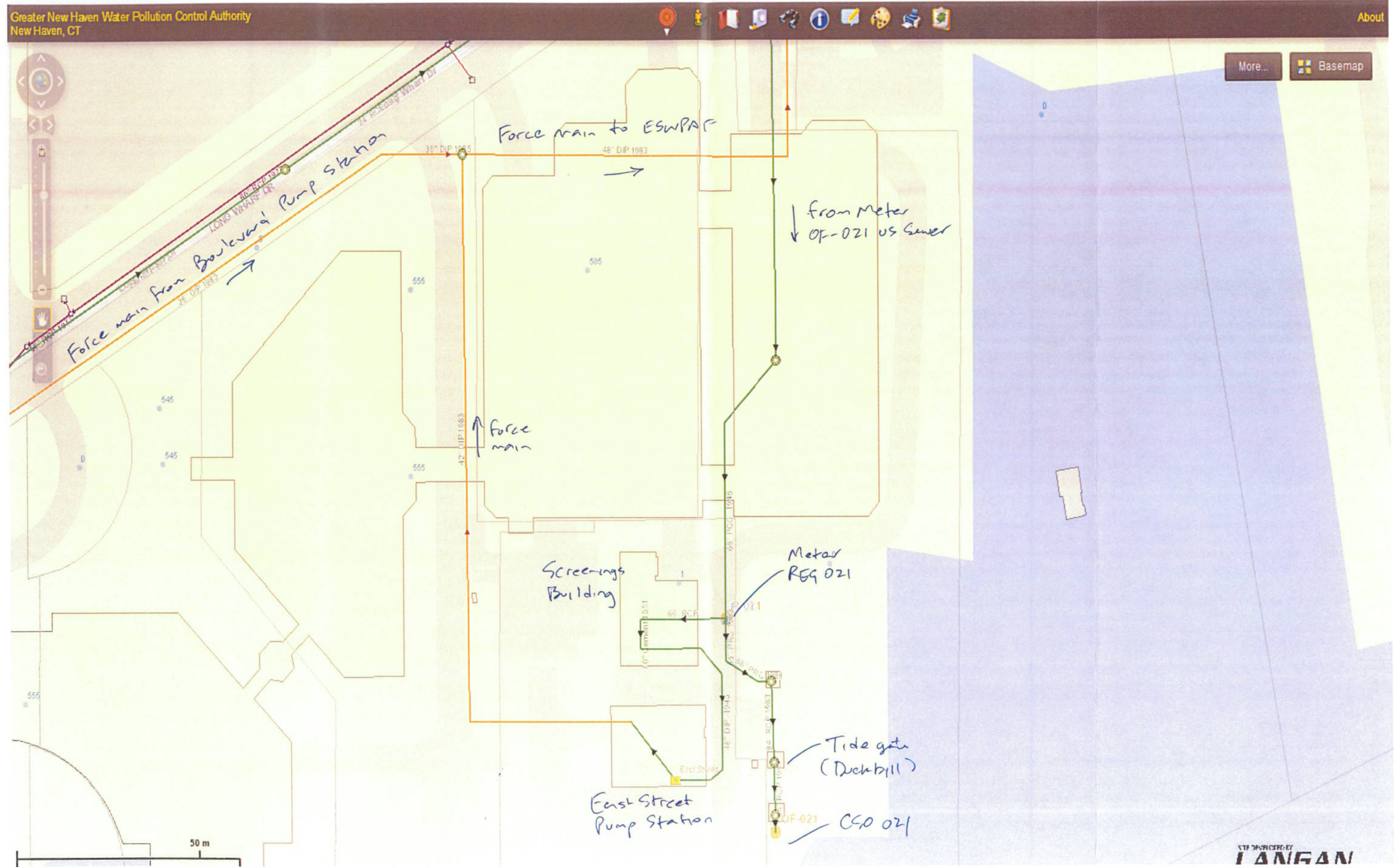
- The East Street pump station and force main were constructed in the mid 1980s to replace the aging East Street treatment plant
- The station contains coarse screens and four vertical centrifugal wet pit-dry pit pumps (3 duty and 1 standby)
- The coarse screens are currently being replaced with new single-stage climber type bar screens
- Magnetic flow meters measure flows on each discharge header
- Levels in each of the two wetwells are monitored with ultrasonic meters
- Flow and level data is available via the SCADA system

EAST STREET PUMP STATION FLOW MONITORING DATA

- On dry weather days the wetwell operates within the operating range in the wetwell and one or two pumps operate
- The existing dry weather flow to the pump station is approximately 10 MGD
- During rain events the wetwell surcharges significantly and all three duty pumps operate
- Peak pumping capacity is approximately 34 MGD

LTCP IMPLEMENTATION

- Following improvements to the ESWPAF to expand the peak wet weather capacity from 100 MGD to 187 MGD, a major upgrade to the East Street pump station is planned
- The upgrade will include replacing the four existing pumps with four new pumps which will increase the peak wet weather capacity from 34 MGD to 52 MGD



44 Main Street
Windor Locks, Connecticut 06996
888.285.8989 | www.woodardcurran.com



REV	DESCRIPTION	DATE
1	DESIGNED BY MB	2013.04.10
2	CHECKED BY MB	2013.04.10
3	DESIGNED BY MB	2013.04.10
4	CHECKED BY MB	2013.04.10
5	DESIGNED BY MB	2013.04.10
6	CHECKED BY MB	2013.04.10
7	DESIGNED BY MB	2013.04.10
8	CHECKED BY MB	2013.04.10
9	DESIGNED BY MB	2013.04.10
10	CHECKED BY MB	2013.04.10

EAST STREET PUMP STATION
MECHANICAL PLAN & SECTION

GREATER NEW HAVEN WPCA
NEW HAVEN, CONNECTICUT

EAST STREET, BOULEVARD
AND MORRIS COVE
BAR SCREENS

JOB NO.: 223133.01
DATE: MAY 2013
SCALE: AS NOTED
SHEET: 5 OF 12

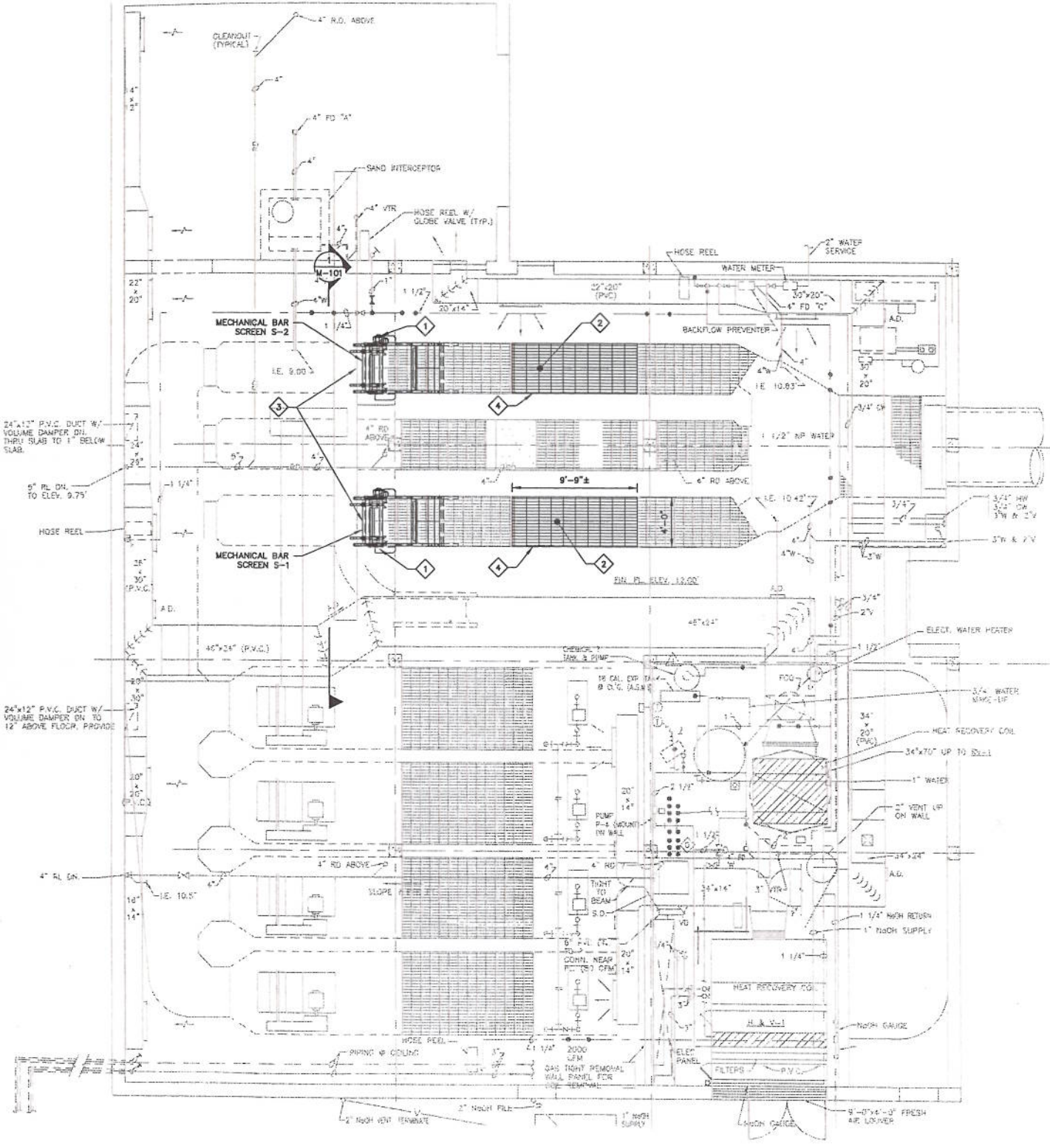
M-101

GENERAL NOTES:

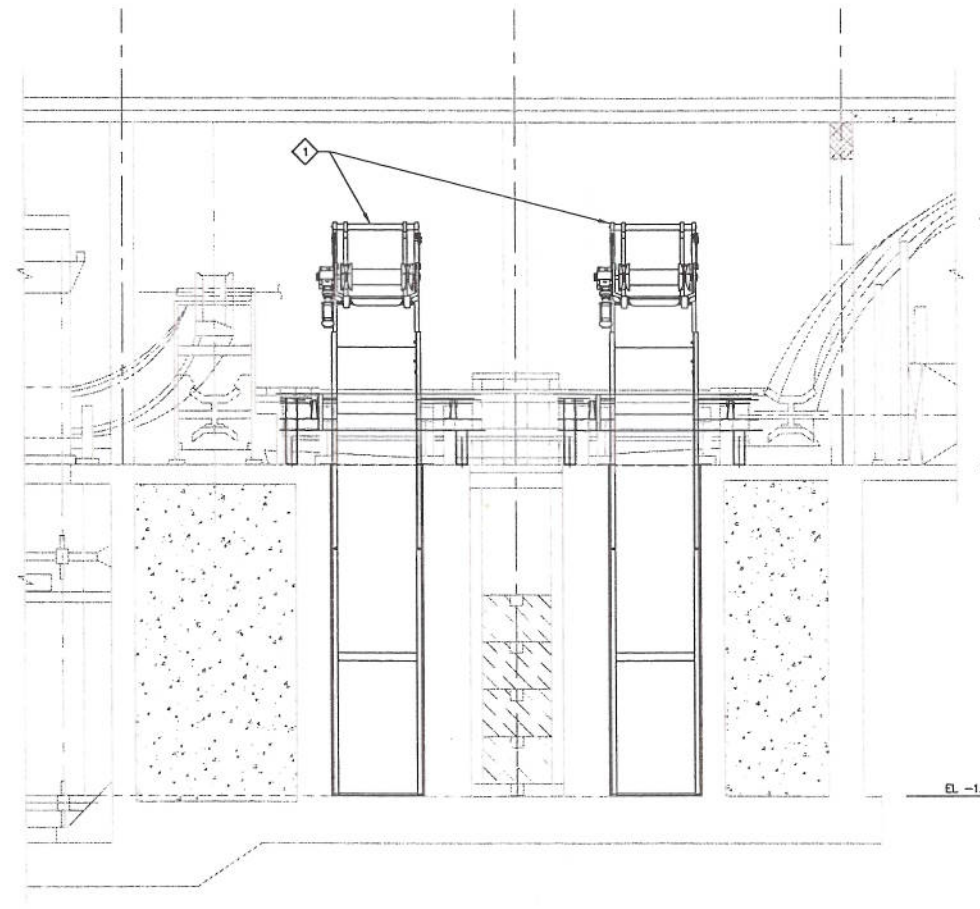
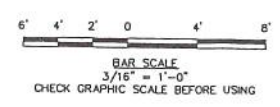
1. BASE PLAN FROM "BOULEVARD - EAST STREET, WATER POLLUTION ABATEMENT PROJECT CONTRACT 1, NO 79-154-41" RECORD PLANS DATED FEBRUARY 1, 1983, FROM CE MAGUIRE, INC.
2. ALL ACTION ITEMS FROM THE BASE PLAN CITED IN NOTE 1 AND SHOWN IN BACKGROUND DO NOT APPLY TO THE WORK OF THIS PROJECT UNLESS OTHERWISE NOTED.
3. FIELD VERIFY GRATING DIMENSIONS.
4. MANUFACTURER SHALL PROVIDE EACH SCREEN IN TWO PIECES, WHICH SHALL BE BROUGHT INTO THE BUILDING AND ASSEMBLED IN PLACE BY THE CONTRACTOR.

KEYED NOTES:

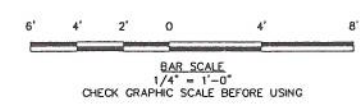
- 1 PROVIDE NEW MECHANICAL BAR SCREEN IN THE LOCATION OF THE EXISTING FINE SCREENS AS SHOWN IN THE DRAWINGS AND AS SPECIFIED IN SECTION 11329. BARS, SCRAPER MECHANISM AND ENCLOSURE ARE NOT SHOWN FOR CLARITY.
- 2 PROVIDE A SUBMERSIBLE LEVEL TRANSDUCER UPSTREAM OF EACH SCREEN. REFER TO SECTION 11329 AND DETAIL B, SHEET M-401.
- 3 MODIFY CONVEYOR DEFLECTOR PLATE BELOW EACH SCREEN DISCHARGE AS REQUIRED TO ENSURE SCREENINGS DISCHARGE DIRECTLY ONTO CONVEYOR WITHOUT SPLASHING ONTO OTHER EQUIPMENT OR THE OPERATING FLOOR.
- 4 PROVIDE FRP GRATING OVER THE OPENINGS WHERE THE EXISTING COARSE SCREENS WERE LOCATED. REFER TO DETAIL A, SHEET M-401.



EAST STREET PUMP STATION PLAN
SCALE: 3/16" = 1'-0"



SECTION 1
SCALE: 1/4" = 1'-0"



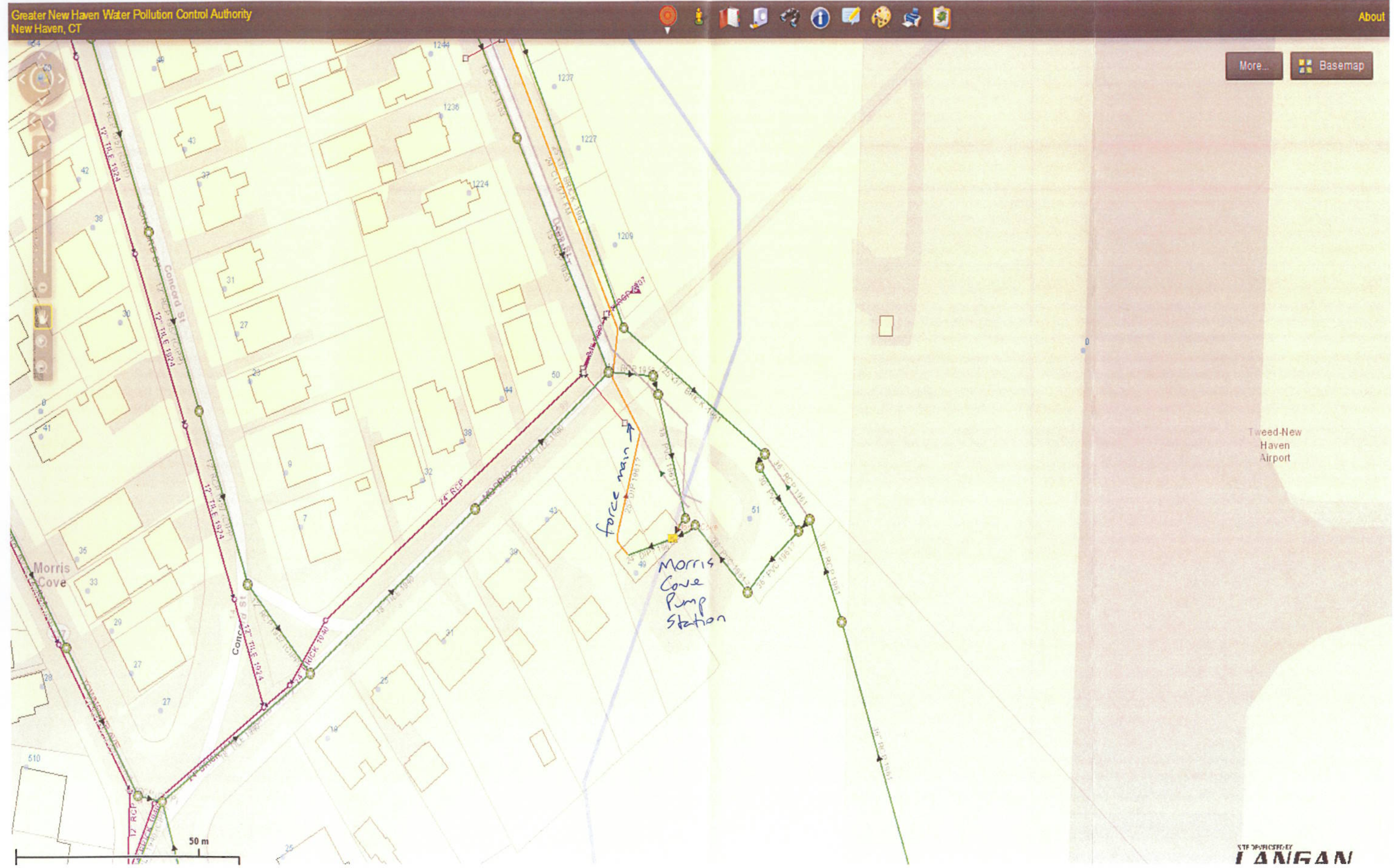
**EPA COLLECTION SYSTEM INSPECTION
DECEMBER 16 – 18, 2013
FACILITY INSPECTION DETAILS**

MORRIS COVE PUMP STATION

- The Morris Cove pump station underwent a major upgrade in 2013 including replacement of the five pumps
- The station contains influent channel grinders and five dry pit submersible pumps (4 duty and 1 standby)
- A new single-stage climber type bar screen is currently being installed
- Magnetic flow meters measure flows on the force main
- Levels in the wetwell is monitored with an ultrasonic meter
- Flow and level data is available via the SCADA system

MORRIS COVE PUMP STATION FLOW MONITORING DATA

- On dry weather days the wetwell operates within the operating range in the wetwell and one or two pumps operate
- The existing dry weather flow to the pump station is approximately 3 MGD
- During rain events all four duty pumps operate
- Peak pumping capacity is approximately 18 MGD



1
2
3
4
5
6
D
B
User: JONES Spec: AUS-VCSM00 CAD: PROJ\254803A\2012 PUMP REDESIGN\254803A\01.DWG Scale: 1:1 Saved Date: 5/3/2013 Time: 14:53 Plot Date: Jan 5/3/2013 14:58 Layout: WORK

GENERAL SHEET NOTES

1. FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS SHOWN.
2. EXIST COUPLINGS, FITTINGS AND VALVES TO BE RE-USED AND RELOCATED WHERE NOTED ON SHEET D-01.
3. CONTRACTOR SHALL INSPECT ALL EXISTING FITTINGS AND VALVES THAT ARE MARKED FOR REUSE. IF EXISTING FITTINGS OR VALVES ARE DAMAGED OR NOT IN GOOD WORKING ORDER, NOTIFY ENGINEER PRIOR TO RELOCATION.
4. CONTRACTOR SHALL PROVIDE ALL NEW GASKETS FOR ALL FLANGED CONNECTIONS BETWEEN UPSTREAM SIDE OF EXIST. 45' ELBOW AT EXIST. HEADER AND EXIST PV-12" SUCTION VALVE.
5. CONTRACTOR SHALL PROVIDE ALL NEW GASKETS FOR EXISTING FLEXIBLE COUPLINGS.
6. CONTRACTOR SHALL RELOCATE EXIST WW-24" PIPE SUPPORTS. PIPE SUPPORTS SHALL BE MOVED A MINIMUM DISTANCE OF 6" FROM PREVIOUS LOCATIONS. LOCATIONS SHALL BE APPROVED BY ENGINEER. CONTRACTOR SHALL USE NEW ANCHORS WHEN RELOCATING PIPE SUPPORTS. ANCHORS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 05 05 33 - ANCHOR SYSTEMS. TOTAL NUMBER OF SUPPORTS TO BE RELOCATED IS FIVE. EACH SUPPORT HAS TWO BOLTS SUPPORTING IT. CONTRACTOR SHALL FILL EXISTING BOLT HOLES WITH NON-SHRINK GROUT.
7. CONTRACTOR SHALL REPLACE BELTS, REPLACE DUST STOPS AND LUBRICATE BEARINGS FOR SUPPLY AND EXHAUST FANS. BEARING LUBRICATION SHALL BE DONE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. CONTRACTOR SHALL PROVIDE SERVICES OF CHECK VALVE MANUFACTURER'S TECHNICIAN TO ADJUST CHECK VALVE SETTINGS TO PROVIDE PROPER OPERATION AND PREVENT CHECK VALVE SLAM OR REVERSE FLOW THRU THE PUMP AFTER SHUTDOWN.
9. CONTRACTOR SHALL PROVIDE NEW HARNESSING RODS TO ACCOMMODATE LONGER DISTANCE BETWEEN FLANGES.
10. ALL ITEMS USED BY CONTRACTOR, INCLUDING BUT NOT LIMITED TO PARTS, EQUIPMENT, PIPING, TOOLS, SCAFFOLDING AND LADDERS SHALL BE MOVED TO THE DRY WELL THROUGH THE EXIST. 5'-0" SQ. ACCESS HATCH OR EXIST. STAIR NO. 2 ONLY.

CONSULTANTS

SEALS



PROFESSIONAL ENGINEER

CT LICENSE NO: 24778

CITY OF NEW HAVEN, CONNECTICUT
WATER POLLUTION CONTROL
AUTHORITY

MORRIS COVE PUMP STATION
REHABILITATION PROJECT

NO.	DATE	ISSUED FOR	BY

COPYRIGHT: ARCADIS U.S., INC.

DATE: MAY 2013
PROJECT NO.: 05654038.0000
FILE NAME: M-01
DESIGNED BY: P.KETCHUM
DRAWN BY: L.JONES
CHECKED BY: T.MCDONALD

SHEET TITLE

WET/DRY WELL
LOWER LEVEL PLAN

SCALE: 3/8" = 1'-0"

M-01
SHEET 5 OF 14

EXISTING
WW-24"
SEE NOTE 7

EXISTING
SINK

EXISTING 12" SURGE
RELIEF VALVE

EXIST. 5'-0" SQ. ACCESS
HATCH ABOVE (SEE NOTE 10)
EXIST. STAIR NO. 2
(SEE NOTE 10)

PLAN AT EL -15.75

EXIST. PRESSURE
SWITCH (SEE DETAIL 1
ON SHEET M-03)
12" 22.5'
ELBOW (TYP.)
AT EL -12.82

NEW PUMP
(TYP.)

NEW HARNESSING
RODS (TYP.)
SEE NOTE 9

NEW BLOW-OFF
LINE (TYP.)

PUMP NO. 5

PUMP NO. 4

PUMP NO. 3

PUMP NO. 2

PUMP NO. 1

RELOCATED EXISTING 90°
LR ELBOW ABOVE AND
90° BASE ELBOW
BELOW (TYP.)

RELOCATED
PRESSURE
SWITCH (TYP.)

EXIST.
SUMP PIT

CONC. PUMP PAD (TYP.)

RELOCATED 1-1/2" BLOW-OFF
PIPING TO BE CONNECTED TO EXIST (TYP.)

6'-2" (TYP.)

EXISTING PV-12"
SEE NOTE 2 (TYP.)

EXISTING 12"x8"
CONCENTRIC REDUCER
SEE NOTE 2 (TYP.)

EXISTING 12" HARNESSING
FLEXIBLE COUPLING
SEE NOTE 2 (TYP.)

WW-12" AT EL -12.82

WW-10" AT EL -14.62 (TYP.)

12"x10" ECCENTRIC REDUCER (TYP.)

10" FLEXIBLE COUPLING (TYP.)



GENERAL NOTES:

- 1. BASE PLAN FROM "MORRIS COVE PUMP STATION, PROJECT NO 01-167-22" RECORD PLANS DATED APRIL 2004, FROM MALCOLM PIRNIE, INC.
- 2. ALL ACTION ITEMS FROM THE BASE PLAN CITED IN NOTE 1 AND SHOWN IN BACKGROUND DO NOT APPLY TO THE WORK OF THIS PROJECT UNLESS OTHERWISE NOTED.

KEYED NOTES:

- 1. PROVIDE MECHANICAL COARSE BAR SCREEN IN THE LOCATION OF THE EXISTING MANUAL BAR RACK AS SHOWN ON THE DRAWINGS AND AS SPECIFIED IN SECTION 11329. BARS, SCRAPER MECHANISM AND ENCLOSURE ARE NOT SHOWN FOR CLARITY.
- 2. OWNER SHALL BE RESPONSIBLE FOR PROVIDING A DISPOSAL CONTAINER TO COLLECT SCREENINGS FROM THE BAR SCREEN DISCHARGE CHUTE.
- 3. CONTRACTOR SHALL FILL IN ALL DISRUPTED CONCRETE AT THE BOTTOM OF THE CHANNEL WITH NON-SHRINK GROUT.

44 Main Street
Windsor Locks, Connecticut 06896
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COMMITMENT & INTEGRITY DRIVE RESULTS

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REV	DESCRIPTION	DATE

DESIGNED BY: KJ
DRAWN BY: DMB
CHECKED BY: MB
2231331-M-301-DWG

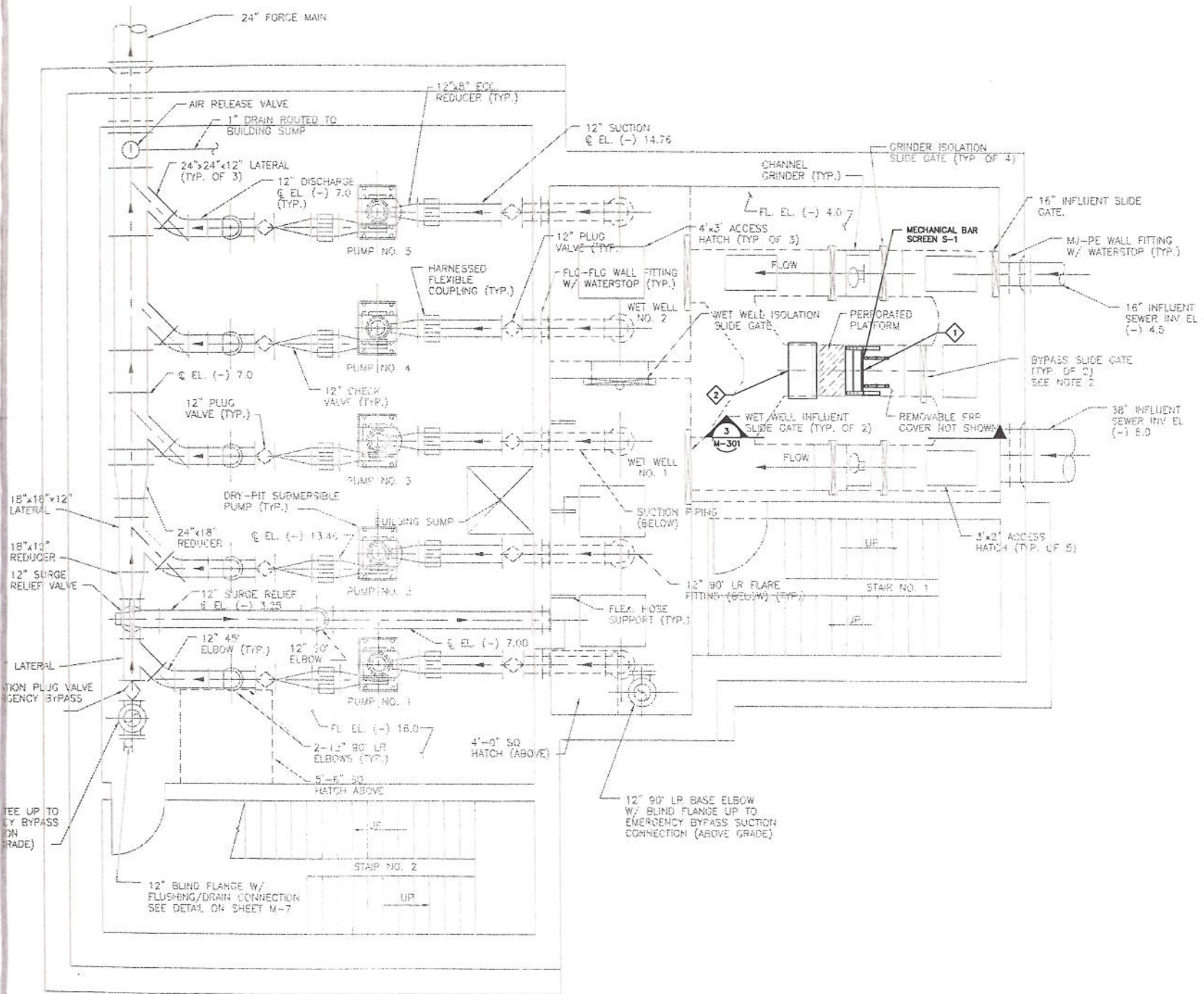
MORRIS COVE PUMP STATION
MECHANICAL PLAN & SECTION
(BID ALTERNATE NO 1)

GREATER NEW HAVEN WPCA
NEW HAVEN, CONNECTICUT

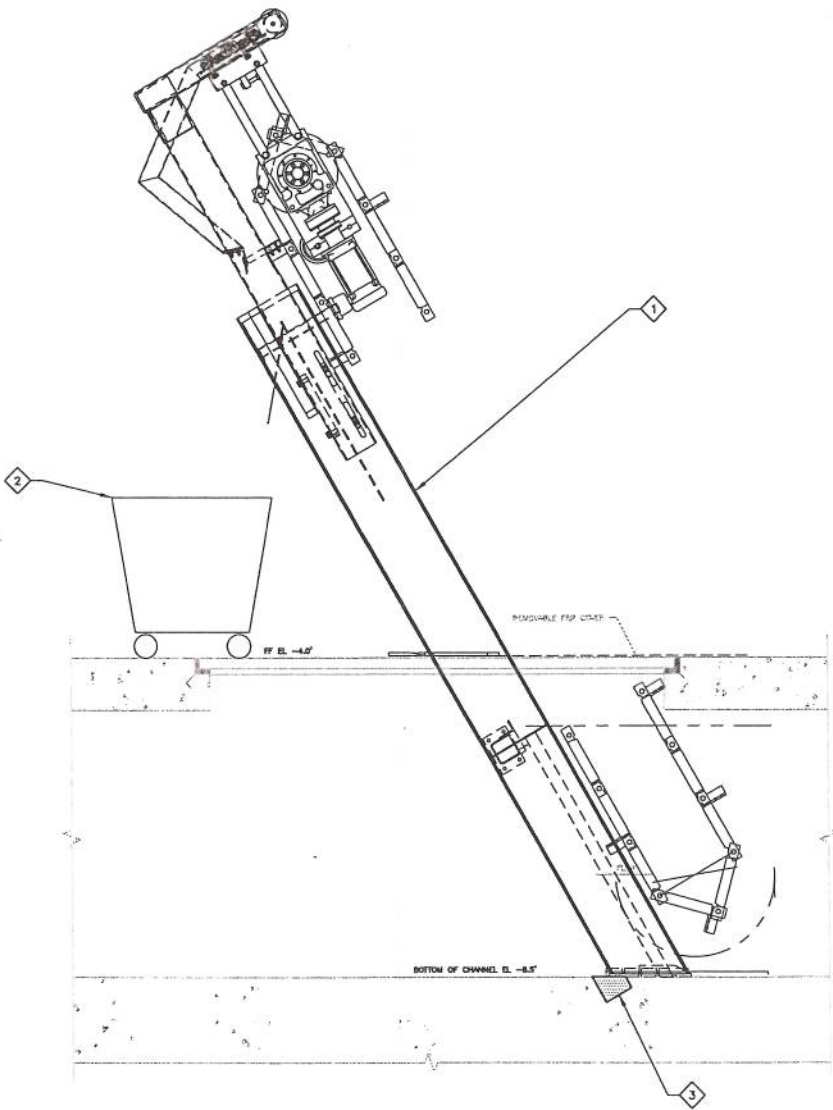
EAST STREET BOULEVARD
AUSTIN, TEXAS 78701
BAR SCREENS

JOB NO.: 223133.01
DATE: MAY 2013
SCALE: AS NOTED
SHEET: 7 OF 12

M-301



MORRIS COVE PUMP STATION DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



SECTION 3
SCALE: N.T.S.
M-301

6' 4' 2' 0' 4' 8'

BAR SCALE
1/4" = 1'-0"
CHECK GRAPHIC SCALE BEFORE USING

**EPA COLLECTION SYSTEM INSPECTION
DECEMBER 16 – 18, 2013
FACILITY INSPECTION DETAILS**

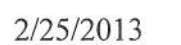
REG 012 AND CSO 012

METERS OF-012 OVERFLOW A AND B

- Meters OF-012 Overflows A and B were installed in the twin 18 inch overflow pipes on 10/15/12 at an invert elevation of 14.20 (overflow depth in the 48 inch sewer is only 36 inches)
- The 36 inch by 55 inch sewer downstream of REG 012 is a hydraulic bottleneck
- Spring flows from the Mill River Trunk Sewer in Hamden contain significant amounts of I/i
- CSO start and stop times are based on positive velocities at Meters OF-012 Overflows A and B
- CSO volumes are calculated based on depths and velocities at Meters OF-012 Overflows A and B, the hydraulic elements chart and the Continuity Equation
- New 6 inch high weirs were installed in each 18 inch overflow pipes on 5/3/13 to reduce the frequency of CSOs
- CSO 012 discharges to the Mill River

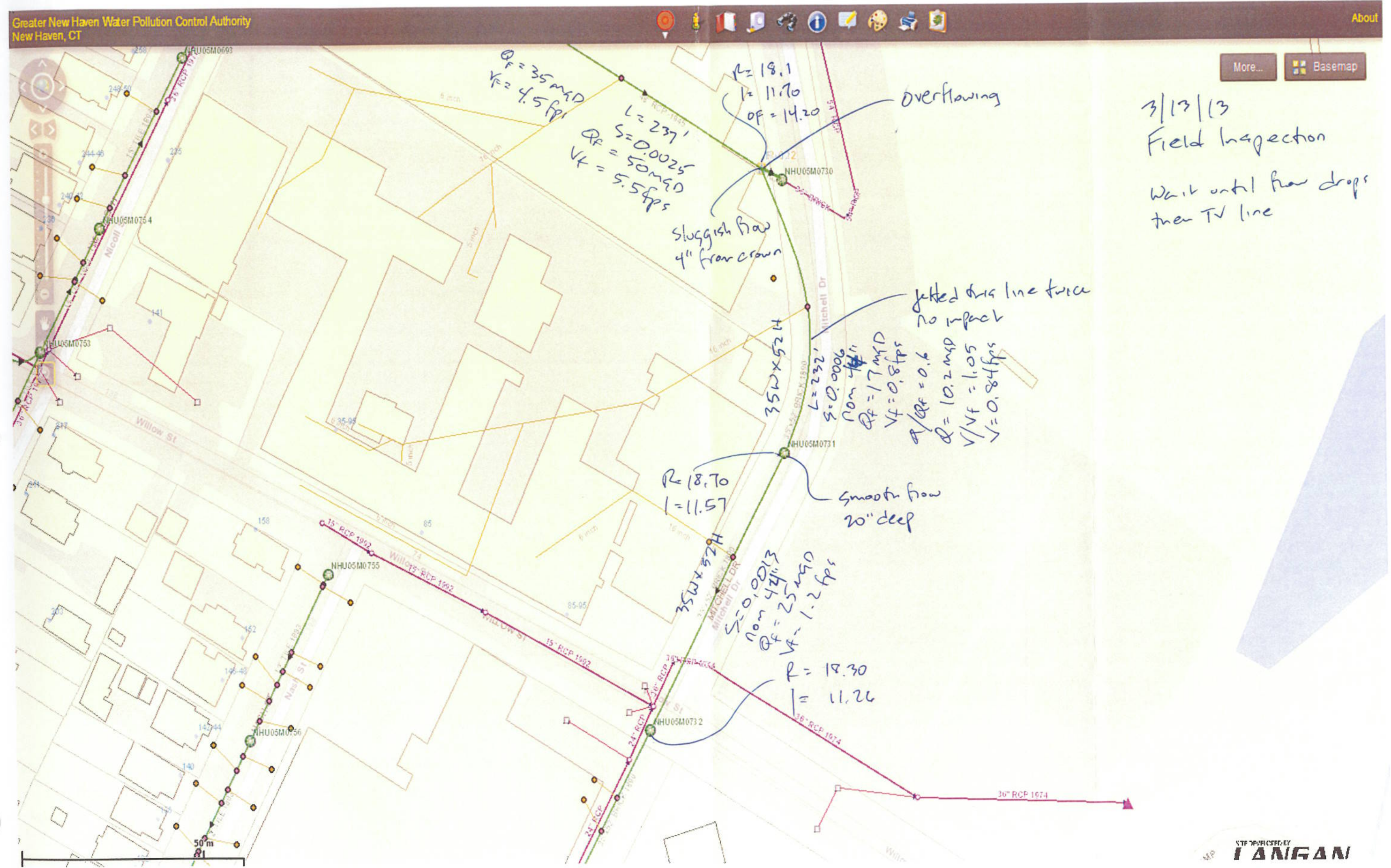
CSO 012 FLOW MONITORING DATA

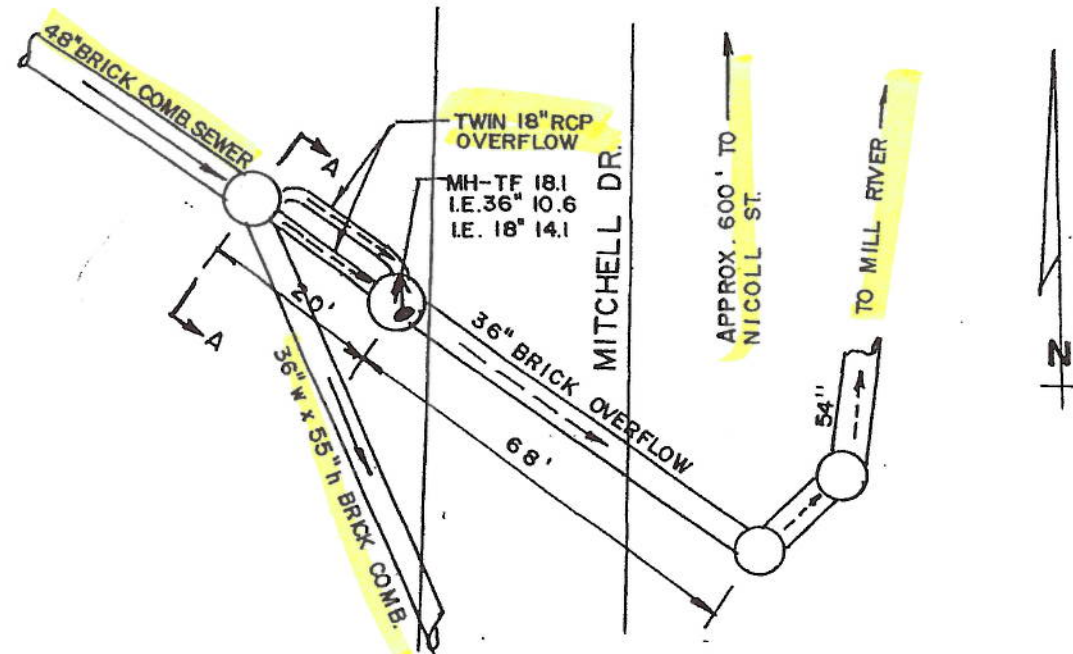
- There have been 31 CSO events between October 2012 and September 2013
- The total CSO volume is 10.6 MG
- In a typical year it is estimated that CSO 012 will activate approximately 27 times
- In a typical year it is estimated that CSO 012 will discharge approximately 9 MG
- Overflow frequency and volume has been reduced since the weirs were raised in May 2013





From
REG
012

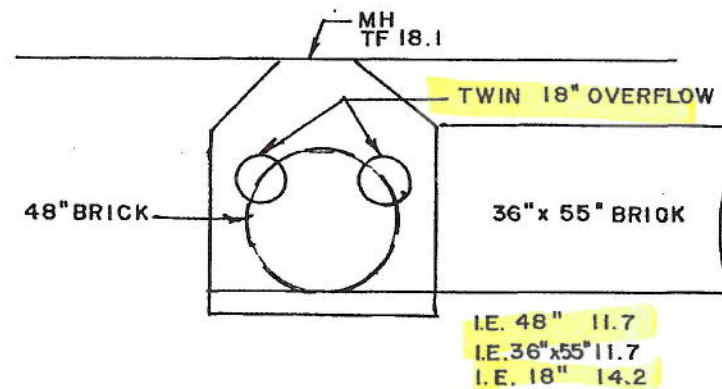




NOTE: 80°F/DRY @ 11:00 AM
FLOW DEPTH 2.2 FT IN 48"

PLAN

N. T. S.



SECTION A-A

N. T. S.

LEGEND

WET WEATHER FLOW



